

A MODEL OF INTER-ORGANIZATIONAL INFLUENCES  
ON ORGANIZATIONAL PROCESSES

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## 19. KEY WORDS (Cont'd.)

Organizational Characteristics/  
Performance  
Organizational Effectiveness  
Program Evaluation

## 20. ABSTRACT (Cont'd.)

Also that the division to which the company belongs and battalion function have some effect, but much less than the companies themselves. Brigades and battalions were found to have little or no impact on organizational climate. Another finding was that demographic effects do not rise in importance when company rather than individual-level data are considered. While various models of organizational functioning were used, the integrated model, which encompasses portions of both the traditional and collaborative models, was found to have the most power in explaining the variance found in this data set.

Results suggest that unit effectiveness will be maximized when units are (a) composed of persons with some amenability to structure and direction and some respect for legitimate authority, and (b) commanded or led by a style which is collaborative or participative,

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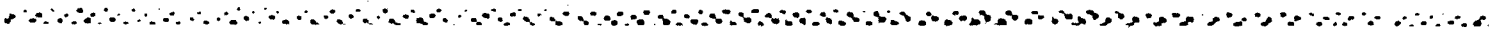
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## TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
1	INTRODUCTION . . . . . Alan S. Davenport	1-1
2	BACKGROUND AND REVIEW OF RELEVANT LITERATURE . . . . David G. Bowers	2-1
3	THE DATA: TYPES COLLECTED AND PROCEDURES USED . . . . Alan S. Davenport	3-1
4	ORGANIZATIONAL INPUT ON COMMAND CLIMATE SURVEY INDICES Norma St. Claire and Robert Farrell	4-1
5	A TEST OF TRADITIONAL AND COLLABORATIVE MODELS OF ARMY FUNCTIONING . . . . . David G. Bowers	5-1
	5.1 Measures and Procedures . . . . .	5-17
	5.2 Results . . . . .	5-20
	5.3 Structural Equation Tests of Traditional, Collaborative, And Integrated Models . . . .	5-42
	5.4 Cross Wave Analyses . . . . .	5-53
	5.5 Discussion And Conclusions . . . . .	5-58
	5.6 Summary . . . . .	5-65
6	SUMMARY AND RECOMMENDATIONS David G. Bowers and Alan S. Davenport . . . . .	6-1
7	References . . . . .	7-1

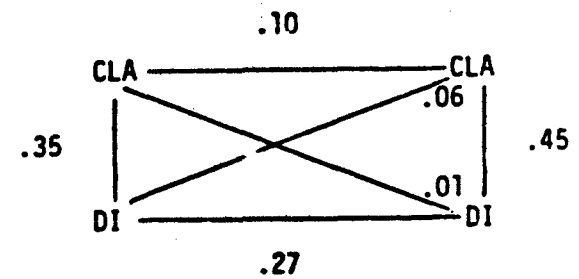
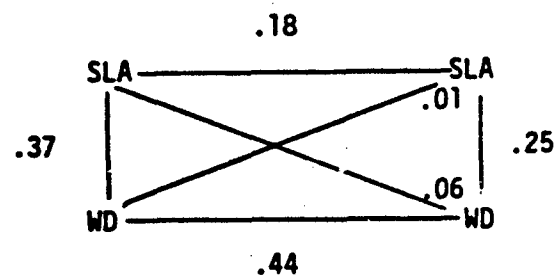
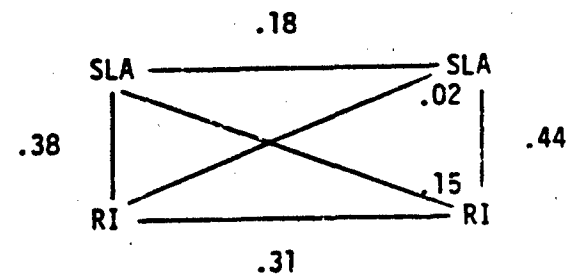
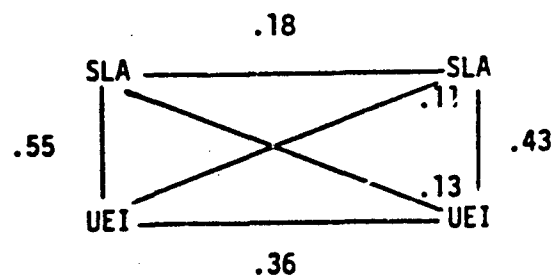
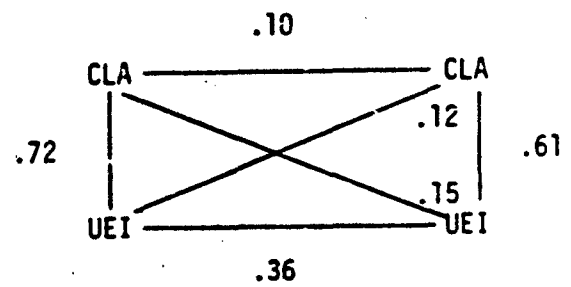
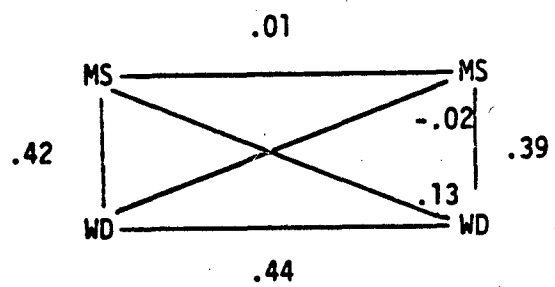
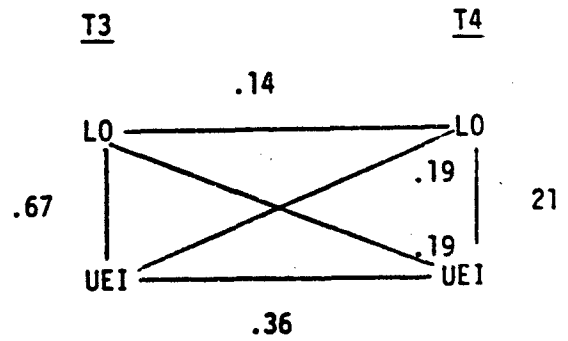
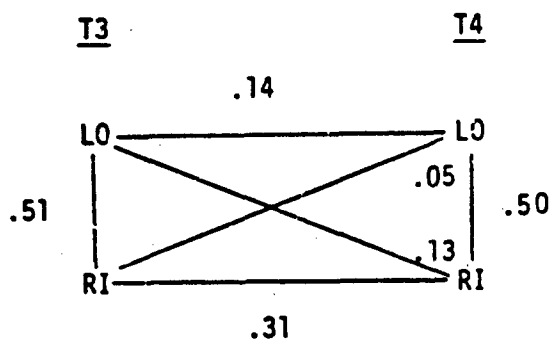
APPENDIX I

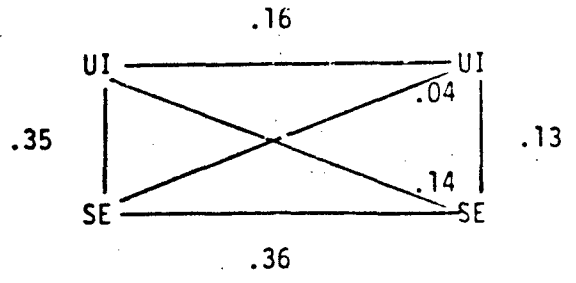
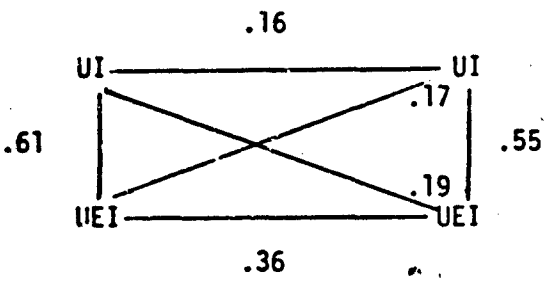
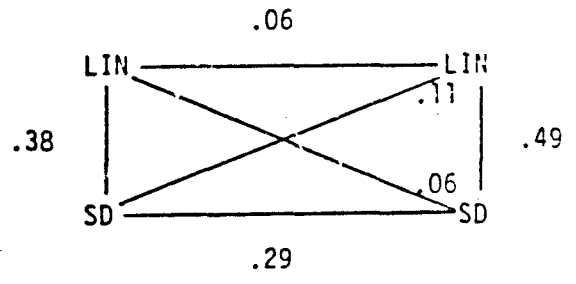
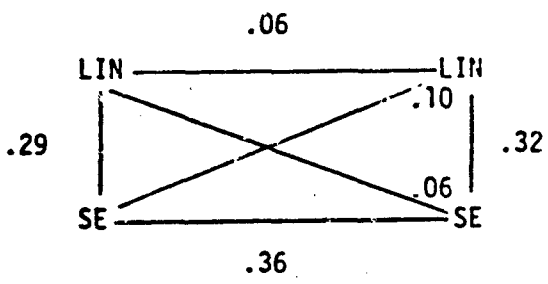
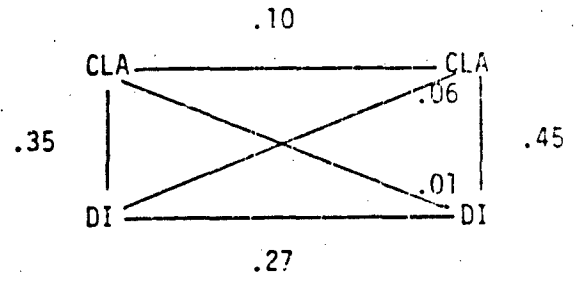
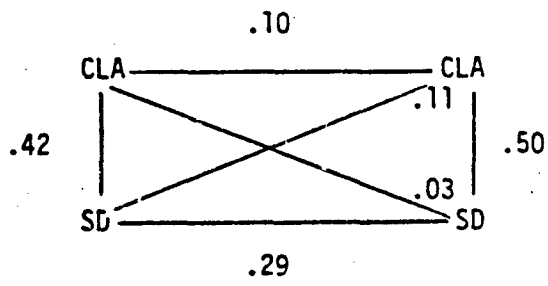
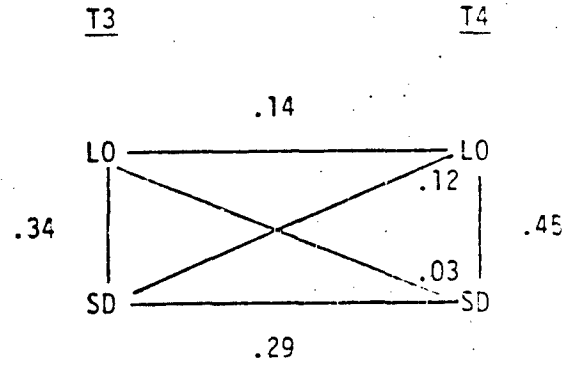
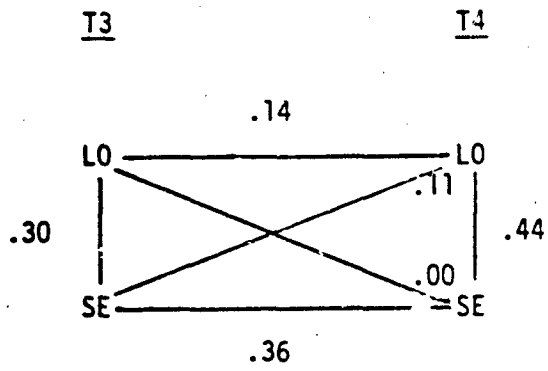
CROSS LAG ANALYSES



# APPENDIX

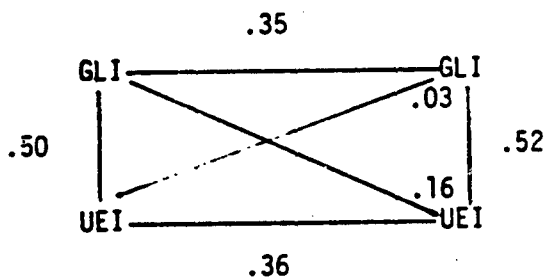
## Summary of Cross-lag Analyses





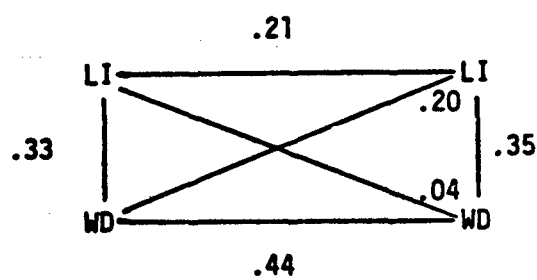
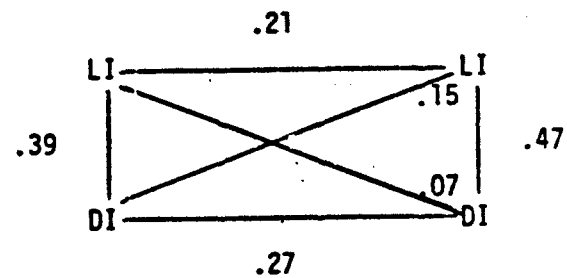
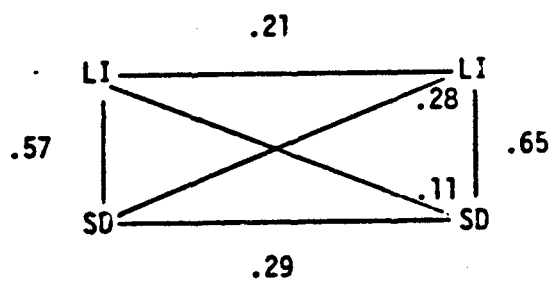
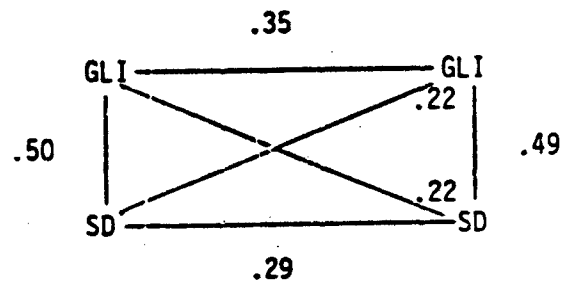
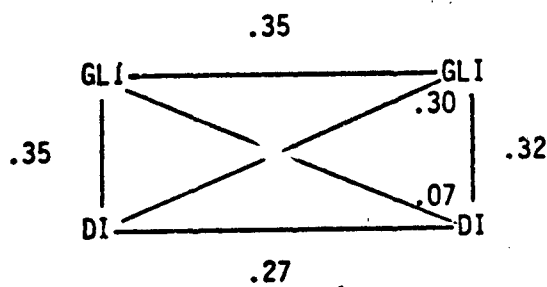
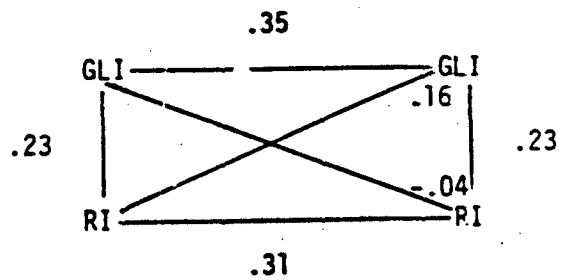
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APPENDIX J

SURVEY/PERFORMANCE CORRELATIONS

# MATRIX OF CORRELATIONS BETWEEN SURVIVAL MEASURES AND PERFORMANCE MEASURES

\*\*\*CORRELATIONS\*\*\*

	V468	V543	V545	V547	V549	V553	V554	V559	V625	V639
RATING	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V443	-0.1912									
V445	-0.2207	0.5002								
V446	-0.0966	0.3975	0.2798							
V447	0.1027	-0.1728	-0.2765							
V448	0.0260	0.1900	0.1153	0.0734						
V449	0.0200	0.0000	0.0000	0.0000	0.0000					
V450	-0.1343	-0.0171	0.1281	0.1142	0.1097	0.0000				
V451	0.0958	-0.0827	-0.2090	0.1487	0.1097	0.0000				
V452	0.0526	0.0950	0.1415	-0.0817	0.1097	0.0000				
V453	0.0259	0.2245	0.2599	-0.0817	0.1097	0.0000				
V454	0.0194	0.1106	0.2101	-0.1234	0.1097	0.0000				
V455	0.0363	0.1493	0.1465	-0.0768	0.1097	0.0000				
V456	0.0222	0.2123	0.2386	-0.1074	0.1097	0.0000				
V457	0.0015	0.1596	0.1104	-0.1366	0.1097	0.0000				
V458	-0.0292	-0.0522	-0.0240	-0.2460	0.1097	0.0000				
V459	0.1388	0.0350	0.0417	-0.2959	0.1097	0.0000				
V460	0.0310	0.1443	0.0549	-0.1330	0.1097	0.0000				
V461	-0.0563	-0.1546	-0.2061	-0.2724	0.1097	0.0000				
V462	-0.2943	0.3010	0.2000	-0.1971	0.1097	0.0000				
V463	-0.1491	0.3109	0.2127	-0.4151	0.1097	0.0000				
V464	0.0150	0.1780	0.1737	-0.1937	0.1097	0.0000				

\*\*\*CORRELATIONS\*\*\*

	V626	V627	V628	V629	V630	V631	V632	V633	V634	V635
RATING	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V627	0.9703									
V628	0.9765	0.9618								
V629	0.9028	0.9382	0.9382							
V630	0.7644	0.7429	0.7429	0.7613						
V631	0.0843	0.4234	0.4234	0.1515	0.0546					
V632	-0.0240	-0.0104	-0.0104	-0.2214	-0.3004	0.3829				
V633	-0.1555	-0.1270	-0.1270	-0.0318	-0.0318	0.0484	-0.1208			
V634	0.4173	0.4327	0.4327	0.5113	0.5204	0.2170	-0.2538	0.2744		
V635	0.4926	0.5477	0.5477	0.4724	0.4812	0.4575	-0.3220	0.1009	0.8189	
V636	0.9710	0.9902	0.9902	0.9740	0.7807	0.4556	-0.1149	-0.0736	0.5168	0.6244

# MATRIX OF CORRELATIONS BETWEEN SURVEY MEASURES AND PERFORMANCE MEASURES

•CORRELATIONS•

		V250	V251	V252	V253	V254	V255	V256	V257	V258	V259	V260
		LOYALTY	DEPLOY	EFFECT	ARMYREF	DISC	STANDS	SENT	INCRINFL	THYX	ASCINFL	RANKING
M V251	M	0.4963										
M V252	M	0.6705	0.4237									
M V253	M	0.0241	0.1434	0.1926								
M V254	M	0.3244	0.1247	0.1670	0.0171							
M V255	M	0.3011	0.3419	0.4320	0.1559	0.2514						
M V256	M	0.7193	0.4244	0.5489	0.0159	0.2501	0.4057					
M V257	M	0.6156	0.2796	0.5146	0.1573	0.3122	0.0844	0.5934				
M V258	M	0.3356	0.2649	0.1795	-0.0156	-0.0810	0.1556	0.3654	0.2617			
M V259	M	0.0198	-0.0321	0.1407	0.0937	-0.0476	0.1556	0.3695	0.0859	0.1440		
V407		0.0772	-0.0034	0.2027	0.0089	0.1343	0.1844	0.3619	0.0979	0.0805	0.0434	
V408		0.1927	0.0993	0.3679	0.0630	0.3040	0.2808	0.3387	0.2058	0.0060	0.0586	
V543		-0.1356	0.0484	-0.1322	0.1753	-0.0394	0.1566	0.0071	-0.0207	0.1100	0.0467	3.6518
V545		0.0159	0.1774	0.0606	-0.0471	-0.0490	0.2998	0.1278	0.0832	-0.0361	0.0864	-0.0183
V546		0.0629	0.0454	0.1046	0.2416	0.1777	0.0604	0.3522	0.1286	-0.2663	-0.0855	3.0016
V547		0.1203	0.0165	0.1231	0.0555	0.1315	0.0946	0.3910	-0.0097	0.2020	0.0771	0.0
V548		-0.2193	0.1959	-0.1111	0.0387	-0.0951	0.1286	-0.1515	-0.1189	0.0478	0.0771	3.0128
V549		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.0100
V552		0.0140	0.1201	0.2094	0.1845	0.0789	0.0800	-0.0457	0.1348	-0.2423	0.0726	99.0000
V553		-0.0035	0.0033	-0.1321	-0.0641	0.0667	-0.0800	-0.0457	0.1348	-0.2423	0.0726	99.0000
V558		-0.0565	0.0105	-0.0271	-0.1167	-0.0348	-0.0479	-0.1316	0.0354	-0.2047	-0.0595	-0.0101
V625		-0.1328	0.0422	-0.0562	-0.1050	-0.2455	0.2199	-0.1316	-0.0026	0.0186	0.1502	-0.0071
V626		-0.1016	0.0422	-0.0562	-0.1050	-0.2455	0.2199	-0.1316	-0.0026	0.0186	0.1502	-0.0071
V627		-0.1490	0.0923	-0.1176	-0.2029	-0.2857	0.1865	-0.3849	-0.0958	0.0900	0.1382	-0.0060
V628		-0.0934	0.0532	-0.2083	-0.1631	-0.2921	0.2134	-0.3343	-0.0657	0.0454	0.1648	-0.0070
V629		-0.1624	0.0751	-0.1374	-0.1155	-0.3542	0.1133	-0.3899	-0.0543	0.0745	0.1312	-0.0048
V630		0.0123	0.0601	-0.0772	-0.2135	-0.3135	0.0823	-0.0543	-0.0627	0.1146	0.1660	-0.0083
V631		0.0801	0.0470	-0.0687	-0.0339	-0.0471	-0.1165	0.3172	-0.0162	0.2409	-0.0517	-0.0127
V632		-0.0842	-0.1225	0.0176	-0.0654	-0.0907	0.0333	-0.0543	-0.0723	0.2109	0.0454	0.0058
V633		0.1465	0.0629	-0.0441	-0.1821	0.0819	-0.0415	0.1957	0.0947	0.0364	0.0800	-0.0125
V634		-0.1325	0.0421	-0.2593	-0.1213	-0.3559	0.0018	-0.3628	-0.1136	0.0975	0.1419	-0.0113
V635		-0.0399	0.0196	-0.0998	-0.1649	-0.2224	0.0407	-0.3763	-0.0902	0.1514	0.1395	-0.0150
V639		-0.1392	0.1137	-0.1108	-0.2317	-0.3087	0.2004	-0.3711	-0.0775	0.1063	0.1772	-0.0045

DEPLOY  
 EFFECT  
 ARMYREF  
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 STANDS  
 SENT  
 INCRINFL  
 THYX  
 ASCINFL  
 RANKING  
 A1 F MAR 79 OVERALL  
 A3 F MAR 79 PERSONNEL  
 A4 F MAR 79 FOH  
 A5 F MAR 79 EQUIPT  
 A6 F MAR 79 TRAIN  
 A7 F MAR 79 ALN  
 B3 F MAR 79 MNS QU  
 B4 F MAR 79 TURNVER  
 B9 F MAR 79 EQUIP READY  
 DEOP DISC 79/AGG STR  
 RADY DISC 79/AGG STR  
 PART 15 79/AGG STR  
 ACT MARS 79/AGG STR  
 RANDLS 79/AGG STR  
 RDRS  
 R1 TERM REE 79/ENL STR  
 R2 CAREER REE 79/ENL STR  
 R3 CRIMES V 79/AGG STR  
 R4 CRIMES PR 79/AGG STR  
 R5 CRIMES 79/AGG STR  
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## LIST OF APPENDICES

### APPENDIX

- A INDEX COMPOSITION
- B COEFFICIENTS OF PARTIAL DETERMINATION
- C SPECIFIC EFFECTS
- D DIRECTIONS FOR SURVEY ADMINISTRATION
- E WAVE 3 QUESTIONNAIRES
- F WAVE 4 QUESTIONNAIRES
- G INTERVIEW SCHEDULE
- H PERFORMANCE (RECORD) FORMS
- I CROSS LAG ANALYSES
- J SURVEY/PERFORMANCE CORRELATIONS
- K DESCRIPTIVE STATISTICS: WAVES 2, 3, AND 4

## Chapter 1

### INTRODUCTION

There is little doubt that organizational life is a multifaceted, complex interaction of a variety of internal and external inputs. Forces external to the formal organization influence the flow of inputs to the organization. In the case of the Army, the obvious inputs are dollars, personnel, and technology. Also, societal conditions influence mission and permissible vehicles for mission accomplishment. Within the organization, structure, leadership, quality of training, coordination, distribution of resources, and motivation of individuals are examples of factors influencing the throughput process, hence the quality of the output. However, in focusing on this interplay of complex variables, the relationship of performance to what comes before is not well specified. It is the intent of this report to look at two specific aspects of organizational characteristics within the Army as they relate to performance: the influence of different hierarchical levels on a variety of measures, and models of organizational functioning with particular focus on leadership.

A growing concern for the performance of civilian industrial service organizations, together with a generally felt need to insure the capabilities of military organizations, have resulted in widespread organizational effectiveness (OE) programs in such organizations. These programs have been diverse in their focus and activities, but most have had as a major goal the enhancement of individual and organizational performance attained through improvements in task and social aspects of work situations. Organizational effectiveness efforts have met with mixed success, and it is not yet clear exactly which factors associated with these programs are needed to maximize the changes for success. However, both theory and empirical evaluations indicate that the presence and quality of diagnostic processes are critical to the success of organizational effectiveness programs.

Diagnosis has received widespread note as a critical element of OE programs. Yet, despite the availability of a large number of scientific articles and books suggesting the importance of diagnostic processes, little of practical value has been developed to enable consultants or organizational managers to conduct meaningful evaluations of organizations. Most diagnostic activity is based on informal observation or inadequately constructed interview schedules or questionnaires which are strongly influenced by predetermined notions of what exists. Little has been done to systematize diagnostic procedures, and even less attention has been given to the critical issue of how diagnosis can serve as a basis for matching problem causes with appropriate corrective activities.

Further, it is clear that even among those striving to develop systematic diagnostic procedures, there is a lack of agreement of how organizations should be evaluated. In fact, there exists considerable controversy in the scientific literature around this issue. Neither the formal debates, nor those which have occurred more informally has resulted in a single widely embraced approach to organizational diagnosis. However, the size and the nature of organizations involved in OE efforts, together with a variety of practical considerations concerning costs and staffing issues, do suggest some directions for diagnostic processes. It is clear that OE programs in large organizations require efficient data collection and evaluation procedures. These requirements greatly reduce the utility of observational and interview procedures and enhance the need for standardized approaches.

However, even the diagnostic stage is to be preceded by the articulation of a model. The role of the model is to identify critical aspects of organizational functioning and the interrelationships of these factors. It is the absence of such a model which, to a large extent, is responsible for the inconsistent and low quality diagnosis occurring today.

Many individuals participating in organizational diagnosis are not aware of the underlying role of a model. That is not to say they are operating without a model of organizational functioning, but rather, that their models are implicit rather than explicit. In these situations, the adequacy and accuracy of the models go uninvestigated, and any such weaknesses in the models get amplified many times over in the diagnosis.

One of the characteristics of a model is that it often presents the ideal state -- what a smoothly functioning unit would look like. The consequence of this feature is that the model is viewed as normative -- something we ought to work toward. To the extent the model is not well articulated, it is difficult to get understanding of and commitment to the model.

One of the principal features of the present research is the development of a model of organizational functioning that is appropriate for the Army. The model is developed from the data collected over two years on repeated measurement of 54 battalions. The anchor of this model is unit effectiveness. That is, it was of interest to develop a model of functioning which explained performance.

A major component of most all organizational models is management style, and that is true in the present circumstances as well. Thus, the model to be presented says something about leadership practices in the Army as they relate to unit performance.

Organizations have developed over the history of human life from small, very specialized systems (e.g., the nuclear family) to large, complex structures (e.g., the U.S. Army). One characteristic of almost all organizations today is the existence of a hierarchical structure. Organizational historians say that these layered structures emerged in attempts to manage the work of the organization more effectively. In most organizations today that contain even a moderate degree of specialization and technology, there are limits to how many people any individual can directly supervise. This "span-of-control" issue has led to multilayered systems such as that in the Army.

It has been well established that individual performance is affected by the types of organizational practices and conditions (organizational climate) in which one works and by the characteristics of the management behavior expressed toward them. The performance or effectiveness, then, of a group of individuals is partially a function of the organizational climate and management behavior. This is not to say that other features such as



job design, quality of training, ability of the worker, availability of appropriate equipment, and capacity to adapt to technological changes are not other essential criteria in determining performance. Rather, that some part of performance is due to climate and leadership.

In a multilayered organization the outputs of those individuals at the base of the organization are influenced by the behaviors of all those in layers of the organization that are above. But one of the aspects of organizational functioning that behavioral scientists do not as yet know is the extent of the influence each of these layers has on the base of the organization and the overall performance of the system. The second major thread of the present research is to try to better describe the impact of hierarchical levels on unit performance in the Army.

The approach to this issue has been to consider a variety of characteristics of organizational functioning, including performance, and to ascertain what impact division, brigade, battalion and company levels were having on these factors. Another conceptual approach to this is that there exists, at the individual level, variation on many different features of organizational life. The question becomes that of "which level -- division, brigade, battalion or company -- can explain the greatest proportion of this variation?".

The remainder of this report contains background information and the results of the specific work undertaken to address the two main features of this study. Chapter 2 is a review of the relevant scientific literature concerning models of functioning, especially those relating to the military. There is not much information in that Chapter on hierarchical issues as this appears to be a topic on which little has been done.

Chapter 3 describes the data collected, and the collection procedures used, on which the analytical investigations were based. Chapter 4 presents the investigation into the questions of hierarchical influence. Chapter 5 contains the rather considerable inquiry into models of organizational functioning. The final chapter serves both as a summary of the research chapters and as an opportunity to identify additional topics which are directly related to the present work.

## Chapter 2

### BACKGROUND AND REVIEW OF RELEVANT LITERATURE

As indicated in the introduction to this report, the general issue examined in the present research is the organizational level whose functioning most significantly impacts the effectiveness of Army units and the form or model which best explains that impact. The question becomes more complex as an effort is made to break it into more manageable, component parts. Basically, two related but separate issues present themselves: (a) whether effectiveness and its related variances is determined well up in the Army hierarchy, or further down, and (b) whether the pattern of behaviors, conditions, and processes which optimally accounts for that determination is collaborative or traditional in form.

On the first of these questions -- the hierarchical level of impact -- available literature in the organizational field is speculatively vocal but empirically sparse. Hunsicker (1976) notes a trend in the military services toward greater centralization, yet a simultaneous trend toward greater specialization, with a resulting increase in inter-function conflict. Odiorne (1976) sees the military as exceedingly bureaucratic and believes that this has produced such negative effects as apathy, alienation, resistance, and ineffectiveness. Toomay, et al. (1976), point to changes which have in their view dramatically affected military organizations, among them: enormous increases in weapons complexity and firepower, greater importance of high technology and support systems, longer time frames, greater emphasis upon preplanning and prepositioning of resources, and more complex information flows. Military actions, they say, are no longer point effects, but extend over broad areas of impact. Presumably all of these are cogent arguments for believing that effectiveness or ineffectiveness of Army units is determined well up in the hierarchy, perhaps at the Brigade or Division levels, or even higher.

On the other hand, a great deal of evidence, both old and more recent, exists to suggest that a prime precursor of unit effectiveness is the face-to-face group. The work of Scott (1956), Henry, et al. (1962), and Page (1946) seems consistent with this, as does that of Chesler, et al. (1955).

More recently, studies of military functioning have also identified intra-group behaviors and processes as important contributors to effectiveness (Franklin, 1974; Bowers, 1973; Wessner & Franklin, 1975). To the extent that this is indeed the case, it suggests that much critical variance is local in origin -- at the battalion, company, or even squad levels. The possibility exists, of course, that significant impact occurs from many or all hierarchical levels, with unit effectiveness and its correlated functioning in part determined by influences from such levels.

The second principal question is addressed by speculation, as was the first, but by a substantial amount of empirical evidence as well. Although logic and argumentation are often employed to make the case for a Traditional, order-and-obedience model of military functioning, the available evidence largely supports a more Collaborative model.

Among the common sense arguments often raised in support of a Traditional model are the following:

- . A military organization does not operate from a profit and loss statement.
- . Any of the services is larger and more complicated than any civilian organization.
- . Military personnel are required to expose themselves to violence and risk of death or injury, and no one does this voluntarily.
- . Military action is so complex that only those well up in the hierarchy have the requisite information, so those lower must necessarily do what they are told.
- . Class or status differences between officers and enlisted personnel are enforced by law.

Each and all of these may, of course, be true, or true in certain situations or instances. Empirical -- and alternative anecdotal -- evidence make them questionable, however. For example, civilian commercial organizations do not operate exclusively by profit and loss statements. On the other hand, military appropriations and budgeting decisions often appear to bear marked similarity to their commercial counterparts. Also, the Services are indeed large, but not that much larger than the largest corporations, and some corporations are larger than some of the Services. Similarly, Stouffer, et al. (1949) found that only 27 percent (in World War II) had ever been in combat, over half of these had ever been within range of enemy fire, and rarely more than 15 percent in any engagement ever fired a weapon at an enemy target. If these numbers were taken seriously (and they may be either erroneous or dated or both), it would mean that nearly 85 percent are not exposed to immediate danger and almost 98 percent never fire a weapon at an enemy. Even on the issues of the importance of topside direction and the impermeability of status boundaries, some doubt exists as to the accuracy in modern warfare of this traditional view.

Much of the empirical evidence concerning conditions conducive to military effectiveness has been conducted at the unit (as opposed to higher or lower) level. In this area, the findings thus far are fairly consistent. Collaborative practices of one form or another have been found to be positively related to retention rate (Drexler & Bowers, 1973; Drexler, 1973; Franklin & Drexler, 1977; Speed & Ryan, 1978), non-judicial punishment rate (Crawford & Thomas, 1975), aircraft maintenance (Shields & Walls, 1978), aviation safety (Kleinman, 1976; Siegfried & West, 1977), submarine reactor safety (Anonymous, 1976), operational readiness (Franklin & Drexler, 1977), and combat exercise performance (Mumford, 1976). Although these studies are unanimous in their support for a Collaborative model (and none, as far as can be ascertained, appear which supports a Traditional view), it should be noted that none were specifically concerned with Army units.

To summarize, plausible cases can be made that events which determine Army unit effectiveness occur (a) largely well up in the hierarchy, (b) largely well down in the hierarchy, or (c) at any or all levels. Similarly, it may be argued either that a Traditional model applies, or that a more

Collaborative model is instead appropriate. To the extent that empirical evidence from military settings exists, it would seem to give a nod to greater variance at lower echelons and to a Collaborative system. However, little of the direct evidence has come from ground combat forces, and the situation in such settings may well be different.

## Chapter 3

### THE DATA:

#### TYPES COLLECTED AND PROCEDURES USED

The purpose of this chapter is to present a description of the types of data collected in this study and as well as how those data were collected. These descriptions cover most all aspects of the collection processes, including sampling procedures, the response patterns, errors in the data as well as the resultant data structures. The last section of this chapter includes suggestions for data collection procedures relevant for any future studies.

As mentioned earlier, the present report focuses largely on that portion of the entire study carried out by the Institute for Social Research and Vector Research, Inc. The early stages of the project were conducted by staff of the Army Research Institute (hereafter referred to as ARI). In particular, two waves of data collection had been done prior to our involvement which began in April, 1979. Since then, two additional waves of data have been collected, Wave 3 and Wave 4. In this chapter, the primary focus is the experience in collecting Wave 3 and 4 data, and its characteristics. However, the procedures used were those established by ARI on Waves 1 and 2, and the same types of data were collected. Even more specifically, the data included in Waves 1 and 2 were also in Waves 3 and 4.

#### Background

Three different types of data were collected in this study. Briefly, these included questionnaires completed by members of selected battalions, interviews with commanders of battalions, brigades, divisions and corps, and performance (record) data at the battalion and company level. The type of data collected by each of these methods was determined by the staff of the Army Research Institute in order to insure comparability with earlier activities carried out by them. The single exception to this was, at the suggestion of study staff, the addition of some questions on the questionnaires.\*

\*Additional items were included in the questionnaire used for Waves 3 and 4, but data from the additional items were not analyzed.

The overall design was a multiple-measurement longitudinal study over 18 months. There were four waves of data collection at six month intervals. These included measurement of a unit's current climate, leadership, and related factors, and performance measures for the preceding six months.

	← Performance →	← Performance →	← Performance →	← Performance →
	May 78	Oct 78	May 79	Nov. 79
Wave	1	2	3	4
Questionnaire Administration	X	X	X	X
Interviews	X	X	X	X

The installations included in Waves 3 and 4 of this study were as follows: Ft. Hood, Ft. Bragg, Ft. Campbell, Ft. Carson, Ft. Lewis, and Ft. Riley. At these sites, 55 battalions had participated in earlier stages of this study conducted by ARI. The previously identified battalions represented a variety of functional types including such things as military police, field artillery, aviation, infantry, medical, cavalry, armor and signal.

#### Data Collection Procedures

For both Wave 3 and Wave 4, essentially the same procedures were followed. Each of the six posts were notified of the forthcoming wave of data collection activities through regular Army channels. They were asked to designate an officer to serve as a point of contact (POC). The POC served as a liaison throughout the study. Each post was asked to select one week out of several offered during which study staff would be on post doing questionnaire administration and interviewing. All negotiations with the POC's on these issues were carried out by ARI staff.

Each post POC was asked to arrange with each participating battalion time and location for questionnaire administration and for interviews with commanders at the battalion, brigade, and division level. During the designated week, a team of three individuals was on post carrying out the data collection. These included two individuals representing the contractor and one person from ARI.

The interviews took place in the offices of the interviewees, most often a satisfactory environment. The beginning part of the interviews were tape recorded. However, the data collected during that part of the interview was for another study and not part of the present investigation.

In some cases, the desired interviewee (battalion commanders, brigade commanders, assistant division commanders, commanding generals) were not on post the week of the study visit. In a few situations, the battalion commanders were brand new (in command less than a week). In some situations where the above occurred, the battalion executive officer was interviewed rather than the battalion commander.

The interviewees were asked, as part of the interview, to rank the units in their command. On a few occasions, the commander refused to do this so that the data on rankings is not 100% complete.

The conditions underwhich the questionnaires were administered were quite varied, most often being in unfavorable locations. These ranged from battalion classrooms to theaters, cafeterias to field hospitals, vehicle maintenance facilities to firing ranges. Other prevalent characteristics were inadequate seating, poor lighting, poor acoustics, no writing surfaces, and, often unbeknownst to the survey administrator, multiple rooms to house respondents simultaneously. It would appear that most battalions had little or no vested interest in participating in the study.

Another feature which may have impacted the quality of the survey data was the inaccurate scheduling. On one occasion, a battalion had its soldiers sitting in a room, idle, for more than one hour because the battalion thought the survey was to be conducted at 0800, while the post POC had them listed at 1000. At some posts, there were some battalions which did not participate



during the designated week, but rather, were administered the questionnaire the following week by the post-POC or his representative. At one post, the POC took leave the week study staff were at his post. At another, the post POC, in essence, refused to participate and study staff did all their own scheduling after arriving at the post.

The above issues are identified not in an attempt to besmirch the capabilities of Army staff, or, in particular, the POC's. Rather, these incidences are possible causes of lower quality data. They reflect circumstances in which battalions were given inaccurate and/or inadequate information about the purposes of the study, and insufficient time to select appropriate samples of battalion personnel to respond to the questionnaire, thereby lessening the quality of the data.

A last environmental feature which varied across the several posts and battalions within posts was the presence and/or behavior of more senior battalion officers. In some survey conditions, there were no commissioned officers present, and during which there existed considerably more chatter, joking, and withdrawal behavior such as sleeping or early exiting. In other situations, enlisted personnel and officers were in separate rooms leading to the same results. Finally, in a few instances, the above distracting behavior were manifested in spite of the presence of platoon and company commanders.

The questionnaires were administered using a standard set of instructions (see Appendix D). These instructions briefly reviewed the purpose of the study and requested the respondents' frank responses to the items.

One significant feature of the procedures used which may bear on the quality of the data is that of anonymity. Questionnaire respondents were asked to write in their Social Security number on the back of the answer sheet along with other demographic characteristics such as battalion and company codes, length of service, pay-grade, and number of dependents. Several responses occurred which indicate that this individual identification may have influenced data quality.

One response was that some individuals did not code in their Social Security numbers. Others made up numbers. Several laughed out loud at the request, or when confidentiality was discussed as part of the introduction

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to the survey. One might argue that those who were worried about anonymity and thus either did not complete or made up a Social Security number could then freely answer the questions. However, one might also hypothesize that some who were worried about anonymity completed accurately their Social Security numbers and then modified their responses to items in the questionnaire.

While no systematic investigation of the types of individuals who did not complete their Social Security numbers took place, one observation made by a survey administrator during three weeks of data collection was that there were a disproportionately high number of senior NCO's who did this.

Another concern with any questionnaire administration has to do with the readability of the instrument. While no formal assessment of the necessary reading level was done for the questionnaire used in Waves 3 and 4 (in order to provide continuity of items across all waves), most all items would clearly not be a problem given Army enlistment requirements. However, some survey administrators raised this issue in our post-survey discussions.

There were some Army personnel who did have some difficulty reading the questionnaire because English was their second language. Some individuals for whom this was a problem would ask for assistance from either their peers or survey administrators. Others clustered together and used each other as resources. It may be presumed, however, that there were yet others who, while needing assistance, did not obtain it, thereby reducing the quality of the data.

At most sites during Wave 3, survey administrators were asked to distribute and collect a second questionnaire. This second instrument, while only 35 questions, definitely added to the confusion surrounding materials and instructions. There were two different answer sheets, two booklets, and slightly different instructions. Additional to these issues, and possibly more important, was the length of the survey. The Wave 3 questionnaire was 128 items for E1-E4's, 124 items for all others. With the 35 additional items, it resulted in 163 and 159 items.\*

In Wave 4, the additional questionnaire was integrated into the regular survey booklet, and answers were placed on the same answer sheet in an attempt to reduce paper handling and confusion. The result was 160 items

\*See Footnote on p. 3-1.

for the E1-E4's, and 162 for all others. While the time required to complete this was not great (most taking less than one-half hour), the length in terms of numbers was a problem. Manifestations of this were people who either stopped after, say, the first 100 questions or began patterning their answers after completing the first side of the answer sheet (that is, just fill up the rest of the answer sheet without reading the questions).

There were features surrounding the collection of performance (record) data as well. As can be seen from the forms (see Appendix H) used to collect the data, some of what was to be provided was classified material. Questions of whether or not it could be released led to delay, and, in some cases, failure to submit it.

Other characteristics were also influential. They included the following: The forms used in this study were not exactly the same as the forms (some) units were using to record their own performance. Different units had different practices in reporting numbers (e.g., raw totals versus percentage of re-enlistment). The forms did not contain sufficient information for those who ultimately were assigned to complete them to know what was wanted. It was hoped to obtain performance (record) data at both the company and battalion level, but many companies were unable to report their data because of their record keeping systems not containing that information over time. And finally, while the forms were distributed to battalions by either the study staff or the POC, most did not have them completed at the time the study team left the post. Follow-up to obtain the remainder of the completed forms by the POC has not been very successful.

#### Sampling

As mentioned above, 55 battalions at six CONUS installations were participating in this study. These units participated in Waves 1 and 2, and the intent was to follow units over time. However, there was no attempt to survey the same individuals.

The post POC's were given the following instructions regarding the number of survey respondents to select.

From each company	20 E1-E4's
	10 NCO's
	5 Officers
Additional Battalion personnel	5 Battalion level officers

Given that most companies have more than 100 members, selection of survey participants was to be according to the terminal digit of the Social Security number. For Wave 3, individuals with terminal digit 7 were to be selected first, then, if necessary, those with an 8, etc. For Wave 4, the first terminal digit number to use was 0, then 1, etc.

Two major characteristics occurred in the sampling. The first had to do with total numbers per battalion. Most of the participating battalions had five companies (the range was four to seven), thus the modal number of requested survey respondents was 180 per battalion. The actual number of respondents in the five company battalions was very near 115.

A second feature is the way the respondents were selected. It appears that, on the whole, little or no effort was made to select individuals by the terminal digit of their Social Security number. The frequency distribution of the terminal digits revealed an almost uniform distribution across the ten possible values, indicating that the sampling procedure was not followed. In more than one instance it was suggested by battalion personnel that those selected were those available, that is, those not involved in significant other activities.

A word of caution ought to be inserted here. There are differences between a random sample and a representative sample. The selection method requested in this study was one possible procedure for selecting a random sample. However, even if it had been followed, there is no guarantee that the resulting sample would have been representative (albeit the chances are pretty good that it would be). Randomness only reflects how the sample is selected, not the attributes of the sample vis a vis the population. Representativeness of a sample is how well the sample mirrors the population with respect to the attributes of interest. Thus the failure to select a random

sample does not necessarily mandate that the sample is not representative of the battalion. For example, if a soldier was selected for the survey because he/she was not in a training activity due to a severely sprained ankle does not preclude that that individual sees the leadership practices in their company similar to how a randomly selected person sees them.

There exists yet another, albeit small, protection against whatever biases entered in the selection of survey respondents. The company mean on any one item is rather insensitive to distortion caused by the presence of a few non-representative views. This is because the mean, for most companies, was based on over 20 respondents, and that the questions had only a five-point response scale. Illustratively, if the true company mean was 3.20, any divergent view could be no further away than 2.20, and the impact of that view on most company's means would be less than 0.11.

#### Data Quality-Empirical

In reviewing the responses to the survey, many data quality issues came to light. Many of these are presented in this section as well as how they were handled.

The questionnaires used in this study employed a separate, optically scanned answer sheet. All questionnaire items could be answered by selecting one of up to five alternatives and filling in the corresponding circle on the answer sheet. Before beginning to answer the questionnaire items, however, the participants were asked to code in the following information in available grids on the back of the answer sheet.

<u>Grid</u>	<u>Content</u>	
D	Social Security Number	
E	Battalion code	
F	Company code	
G	Number of months in unit	
H	Number of dependents	
I	Version number of questionnaire	
J	Pay grade	
K,L	Number of years in Army	} Wave 4 only
M,N	Age	

(Grids A through C were left blank). Thus there were two different aspects of the responses on the answer sheet which permitted inspection as to data editing, item answers and demographic grids.

Within the questionnaire itself there were no questions which permitted cross-validation with the demographic data in the grids as identified above. However, there were certain phenomena within the item responses that did permit some editing. One of the most frequent occurrences was that of a patterned response. Visually, on the answer sheet, two such patterns would look like the following:

1 ● B C D E	21 ● L L L E
2 ● B C D E	22 A ● C D E
3 ● B C D E	23 A E ● D F
4 ● B C D E	24 A B C ● F
5 ● B C D E	25 A B C D ●
6 ● B C D E	26 A B C ● F
7 ● B C D E	27 A B ● D E
8 ● B C D E	28 A ● C D E
9 ● B C D E	29 ● B C D E
10 ● B C D E	30 A ● C D E

Figure 1

If such patterns existed over several blocks of the answer sheet, the answer sheets were excluded from the data set. One phenomena, mentioned earlier, was the beginning of a pattern late in the questionnaire, especially beginning at item #101 following the turning over of the answer sheet. When possible, if a significant part of the answer sheet had unpatterned responses and then switched to patterned, only the unpatterned items remained in the data set.

The answer sheet used in this study permitted the use of up to 200 questions. The response area for the first 100 items was on one side, the area for the second on the other. Several respondents filled in the response circles for 200 questions, well beyond the number in the questionnaire. In such cases, as it was not discernible where the valid answering stopped and the imaginary answering began, these answer sheets were dropped from the data set. Approximately one percent of all answer sheets were omitted by the two above criteria through a visual checking process.

There was one other way of inspecting data quality by looking at the answers to the questionnaire. There were two questions on each version of the questionnaire which had only two possible answers (all others had five alternatives). The first of these was item number one which asked the respondents' sex. The percentage giving inadmissible responses to this item in Wave 3 was 0.7%. The second question had a yes/no answer set and was much later in the questionnaire (#97) on the instrument for E1-E4's, #100 for the officers - Wave 3). In the Wave 3 data set, 11% of the E1-E4's gave inadmissible answers, and five percent of the officers.

There are several reasons that individuals may have provided these answers. Of greatest concern, of course, is that they were not reading the questions, but just randomly filling up the answer sheet. And if this is true, one could argue that there were another seven percent and three percent, respectively that could have been also just randomly filling in the answer sheet but happened to pick from the admissible alternatives simply by chance. More positive possibilities include that an individual got off by one while answering the survey, or wanted the last of the alternatives listed, so filled in the last circle provided on the answer sheet for that item.

As these inadmissible answers indicated a strong likelihood that these particular respondents were not answering questions carefully, it was decided to omit all those who provided such answers from the data set.

The demographic data provided some ways of checking the data set and gave some basis for removing individuals from the data set. For example, if an individual did not complete their battalion code, there was no way to identify them with respect to which aggregate group they belonged. Also

if they inaccurately coded their battalion number, there was no way of being sure from which battalion they came. (Upon being confronted by this problem in the Wave 3 data set, Wave 4 answer sheets were collected by battalion and visually checked for accuracy).

The criteria used for deletion from among the demographic variables coded on to the grids of the answer sheet was consistency of pay grade and version of the questionnaires. All E1-F4's were to complete Version I, while E5's on up were to complete Version II. Anyone who listed their pay grade as E1 to E3 but said they answered Version II, or any E5's on up who said they answered Version I were removed from the analysis. As some E4's were acting E5's, and thus completed Version II, there was no way of discerning inconsistencies, so they were all left in the data set. Approximately two percent were deleted using the above criteria.

One other feature showed up in the pay grade column which indicated some problems with data quality. Thirteen Wave 4 respondents said their pay grade was O-6 or higher. As no Lt. Colonels or above were to participate in this survey, such individuals were deleted from the data set.

There were some problems in the performance (record) data as well. As mentioned earlier, different units had different ways of reporting certain variables. But clearly the biggest problem was just obtaining the data. For example, for Wave 3, only 34 of the 55 battalions completed page 1 of the two pages. However, only 26 ever submitted both pages of the form. And given that it was the second page that contained battalion strength (number of individuals presently assigned to the battalion) which was used to convert most of the values on the first page into rates (rather than total number of occurrences), there was a drastically reduced data set on which to compare unit questionnaire responses to performance measures. Although one possibility might have been to impute battalion strength from the earlier data waves to waves 3 and 4, it was concluded that this was inadvisable. Even from Waves 3 to 4 for battalions presenting strength statistics changes ranged from a gain of 21 persons to a loss of 111 persons.



### Survey Data

This section contains a description of the data collected on the survey instruments and the indices that were generated from them. The actual survey questionnaires are included in Appendices E and F.

As stated earlier, the principal content of the questionnaires was prepared by ARI and used in Waves 1 and 2. Approximately 22 items were added to both Versions I and II for Waves 3 and 4. Analyses of all items for both Waves 3 and 4 were carried out to develop indices (or factors or scales) which had both empirical and theoretical consistency. The method used to group the items was a cluster analysis algorithm. The results of this cluster analysis are presented in Appendix A. The description of the resultant indices is given in Table 1.

The internal consistency measures (alphas) of these indices are acceptable. The range of alpha values is (.41, .90), indicating some low values, but without the two indices, Discipline and Standards Enforcement, the range would be (.64, .90). The alpha values for individual indices can also be found in Appendix A.

The indices discussed above are similar to the factors generated by ARI resulting from analysis of Waves 1 and 2 data. Eight of the first 11 indices (the analysis of questions comparable across waves) are identifiable in the ARI factor analysis. In doing a comparable analysis of the Wave 4 data the same clusters appeared for the first 13 indices, and somewhat similarly for the last four.

### Performance Measures

Both the interview data and the "hard" performance (record) data provide measures of performance. The former yield both rankings and ratings of unit performance, while the latter are numerical measures related to discipline, re-enlistment, and preparedness. (See Appendix H). The measures used are provided in Table 2.

TABLE 1

## SURVEY INDICES

<u>Index</u>	<u>Description</u>
Organizational Climate A	A measure of how officers behave and the system functions which leads to the individual feeling valued and respected.
Organizational Climate B	This measures how organizational practices interfere with task accomplishment and satisfaction.
Supervisory Leadership A	Description of supervisory (the individual who assigns and evaluates your work) behavior which demonstrates respect, acceptance, and encouragement of effort.
Supervisory Leadership B	The extent the method used by the supervisor to assign and manage work tasks interferes with task accomplishment.
Group Cohesiveness	The degree with which soldiers in a unit work and get along with each other.
Job Challenge	Characteristics of the jobs that relate to stimulation and importance.
Motivation	The extent to which individuals are trying hard to perform well.
Loyalty to Organization	A measure of satisfaction with the Army and how the Army is treating them.
Willingness to Deploy	The readiness soldiers feel to enter actual combat.
Unit Effectiveness	An indicator of how effective the unit is and the respect it receives.
Army/Unit Reference Group	A measure of whether an individual has a social support system (good friends) in or outside the Army.
Discipline	The degree to which substance abuse (alcohol and drugs) is a problem in the unit.
Standards Enforcement	This describes the level of adherence to rules and operating procedures.
Military Sentiment	The perception of the individual about the intelligence and commitment of top level Army officers.

TABLE 1 (Continued)

## SURVEY INDICES

<u>Index</u>	<u>Description</u>
Incremental Influence	A measure of the extent to which the supervisor is liked and respected.
Ascribed Influence	The extent to which the supervisor uses rewards/punishment to get people to work hard.
Theory X Beliefs	The degree the individual agrees with the set of beliefs that people are inherently lazy, do not enjoy work, and therefore need to be rather rigorously controlled.
<u>Single Item Indices</u>	
Assignments	The degree to which the person knows what they will be doing from day-to-day.
Pay	Satisfaction with pay.
Career	The commitment to stay in the Army in the future (low scores indicate staying in, high scores indicate plans to leave at end of present obligation).
Standards	The extent to which appropriate order and discipline standards are maintained.
Authority	The extent to which subordinates do what they are told because they respect the supervisor's authority?
Unit commitment	The extent to which people do what they are told because they feel they owe it to their unit.
Unit Interrelationships	An assessment of the interdependence of a given unit with other units (low scores indicate relative independence, high scores indicate high interdependence).
Unit Exchange	A description of the types of exchanges a unit has with other units (1 - goods and materials; 2 - services; 3 - information).
<u>Officer Only Indices</u>	
Battalion Work Effectiveness	The extent to which the battalion is effective in doing its work.
Battalion Effectiveness	A comparison of how effective is the present battalion compared to other battalions in which the officer has served.
Battalion Improvements	The volume of improvements necessary to make this the most effective battalion (a low score indicates many improvements are needed).

TABLE 1A  
SURVEY INDICES\*

Index	Reliability (Alpha) Coefficients	
	Wave 3	Wave 4
Organizational Climate A	.79	.84
Organizational Climate B	.71	.70
Supervisory Leadership A	.83	.82
Supervisory Leadership B	.77	.71
Group Cohesiveness	.64	.65
Job Challenge	.84	.86
Motivation	.69	.68
Loyalty to Organization	.76	.73
Willingness to Deploy	.90	.92
Unit Effectiveness	.71	.74
Army/Unit Reference Group	.65	.67
Discipline	.54	.57
Standards Enforcement	.41	.40
Military Sentiment	.77	.78
Incremental Influence	.67	.69
Ascribed Influence	.40	.19
Theory X Beliefs	.63	.64

\*Indexes were derived by use in each Wave of the Hierarchical Cluster Analysis (ICLUST) Program, developed by Revelle, W. and Kulik, J., Ann Arbor, Michigan: The University of Michigan, Center for Research on Learning and Teaching, 1970.

TABLE 2

PERFORMANCE CRITERIA

1. <u>No. of EDP Discharges</u> Aggregate Strength	15. Personnel REDCON
2. <u>No. of Adverse Discharges</u> Aggregate Strength	16. EOH REDCON
3. <u>No. of Articles 15</u> Aggregate Strength	17. Eqp't. Status REDCON
4. <u>No. of Courts-Martial</u> Aggregate Strength	18. Training REDCON
5. <u>No. of AWOLs</u> Aggregate Strength	19. ALO
6. <u>No. of DFRs</u> Aggregate Strength	20. MOS Qualified percent
7. <u>No. of Crimes of Violence</u> Aggregate Strength	21. Turnover (percent)
8. <u>No. of Crimes against Property</u> Aggregate Strength	22. Percent Equipment Ready
9. <u>No. of Marijuana/Drug Offenses</u> Aggregate Strength	
10. <u>No. of First Term Reups</u> Enlisted Strength	<u>RANKINGS AND RATINGS</u>
11. <u>No. of Career Reups</u> Enlisted Strength	23. Companies - Battalion Commanders percentile ranking
<u>COMPOSITES:</u>	24. Companies - (23) x the mean of brigade, ADC & Division Commanders percentile ranking for battalion
12. Discipline = (1)+2+3+4+5+(6)+7+8+9	25. Battalions - Brigade commanders percentile ranking
13. Re-enlistement = 10+11	26. Battalions - ADC's percentile ranking
14. Overall REDCON	27. Battalions - Division commanders percentile ranking
	28. Companies - Battalion commanders rating A+ to E
	29. Companies - (28) x the mean of brigade, ADC and Division commanders' ratings for battalions
	30. Battalions - Brigade commanders' rating
	31. Battalions - ADC's rating
	32. Battalions - Division commanders rating

The calculations of the rankings and ratings were completed as follows:

Rankings: Being ranked  $k^{\text{th}}$  of  $n$  units yields a score of

$$\frac{n+1-k}{n}$$

Ratings: A+ = 13, A = 12, A- = 11, B+ = 10, B = 9, B- = 8,  
C+ = 7, C = 6, C- = 5, D+ = 4, D = 3, D- = 2, E = 1.

As one can see by the definition of measures 24 and 29 in Exhibit 3-3, company ratings and rankings are being modified by the battalion values. In essence, this is an attempt to weight the difference between being the second best company in the best battalion on post and being the second best company within one of the lower ranked battalions.

#### Recommendations

In doing any survey data collection among Army personnel in the future, we would suggest the following for consideration:

1. Keep the instrument relatively brief.
2. Have some product available to the battalion (company) so that there is greater chance for commitment to the survey by officers and staff of the unit.
3. Build in an evaluation of the post POC's performance to be reported to the POC's immediate superior officer as well as to the POC. (This necessitates the existence of clearly defined criteria before the procedure starts.)
4. If multiform questionnaires are used, either prestuff answer sheets or color code them, preferably both. (This would reduce the version identification confusion.)
5. Get multimeasures of critical demographics to reduce having to discard respondents for inaccurate identification.
6. Using a firm cover may help with the absence of writing surfaces.
7. Define the sample selection procedures in ways that are easy to implement at the company level.

## Chapter 4

### ORGANIZATIONAL IMPACT ON COMMAND CLIMATE SURVEY INDICES

This chapter describes the analyses conducted during this project to analyze the relative amounts of influence associated with units at various levels in the military hierarchy on command climate as perceived by individuals in the lowest level units. During this portion of the study, analysis indices were constructed to represent variables and constructs of interest, statistical analyses were performed to analyze the effects associated with the various superior hierarchical units, and statistical theory was used to determine the relative quantitative contributions of these effects to individual and unit climate indices. The chapter is organized in three major sections: the first describes the methodology employed in the analyses, the second describes the results obtained in the analysis, and the third summarizes conclusions from the analysis.

#### Methodology

The first step of this portion of the analysis was construction of unit climate indices from the survey questions. As discussed previously, cluster analysis methods were used to perform a factor analysis of survey responses. Through this analysis, seventeen groups of survey questions were identified as cohesive clusters. Eleven additional questions were singled out as single-question indices of important substantive interest. (As discussed previously, these analyses were performed for both wave 3 and wave 4 data, and the results showed general agreement with the previous factor analysis of wave 2 data.) Appendix A describes the composition of these twenty-eight indices in terms of the survey questions, as well as showing the numerical and short-name forms under which they will be identified in the discussion of results.

Indices were constructed only where data was present for all questions used in the construction of an index with three or fewer questions or for all or all but one for indices involving more than three questions. All other cases involved the assignment of a

"missing data" value for the index. This strict rule did not significantly reduce the sample sizes in the analysis (as can be seen from the data presentations in Appendix I). All the further analyses described in this chapter were conducted in terms of the constructed indices. Relations among these indices and between these indices and performance data obtained on a non-questionnaire basis were examined in other analyses, which did not explicitly examine the relative contributions of the organizations at various hierarchical levels to the indices.

The goal of this analysis was to determine the relative impact of units at various organizational levels on the perceptions and participation of individuals as represented by the twenty-eight analysis indices. For this analysis, units were organized into a hierarchy with four levels:

- 1) Divisions;
- 2) Brigades;
- 3) Battalions; and
- 4) Companies.

All individuals were members of companies. Each company was a member of a battalion; each battalion, a brigade; and each brigade, a division. In the process of assigning units to their hierarchical positions, administrative "brigades" not corresponding to actual combat arms brigades were constructed for analysis purposes.

In analyzing the way in which individuals' (and units') scores on the indices were affected by their organizational affiliations, analyses were conducted in such a way as to allow the separation of effects associated with the mix of individual (demographic) characteristics of the personnel in a unit, with the unit's role or function, and the remaining effects due to other characteristics of the individual units themselves. These analyses may be considered either as methods used to control for effects of confounding effects of demographics and unit function or as analyses of these effects. From either view, it was felt important to separate the effects as clearly as possible. The specific analyses will be discussed below.



Each wave involved more than 4000 individuals in more than 200 companies. This large data set prohibited complicated non-linear analyses. Accordingly, the analyses were all designed around a general linear model of the index scores. In this model, each individual subject's index score on each separate index is considered to be the sum of the overall mean and linear effects of each demographic or hierarchical variable. As is pointed out in statistical texts, this model may be considered either as an analysis of variance model or a regression model -- both forms of model are the same for the discrete types of variables with which this analysis deals.

The analyses conducted involved, using the typical language of the analysis of variance, a model considering crossed demographic effects without interaction terms, crossed with the effect of battalion function and with the effects of the hierarchical units, with the effects of the hierarchical units treated as nested effects, so that the analysis addressed the effects of battalions within brigades, brigades within divisions, etc.

The mathematical form of the model used for analysis of the index scores was

$$S_i^{(I)} = M^{(I)} + \sum D_{k\ell_i}^{(I)} + F_{fb_i}^{(I)} + H_{1d_i}^{(I)} \\ + H_{2g_i}^{(I)} + H_{3b_i}^{(I)} + H_{4c_i}^{(I)} + E_i^{(I)},$$

where

$S_i^{(I)}$  is the score of the  $i$ th individual respondent on the  $I$ th index;

$M^{(I)}$  is the (global) mean score on the  $I$ th index;

$D_{k\ell_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to the  $D_k$ 's individual having demographic factor  $k$  at level  $\ell$  (so that the sum of the  $D$ 's over all levels  $\ell$  is zero), where the demographic factors and levels are as shown in Table 3;

TABLE 3  
DEMOGRAPHIC FACTORS AND LEVELS

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Sex:

Male  
Female

Marital Status:

Single  
Married; living with family  
Separated; lack of housing  
Separated; other reason  
Divorced

Housing Status:

On post - barracks  
On post - family housing  
On post - other  
Off post - government housing  
Civilian

Race:

Black  
Hispanic  
Native American  
White  
Other

Education:

Less than high school  
High school or G.E.D. diploma  
Some college  
College degree  
Advanced degree

School grades:

Mostly A's  
Mostly B's  
Mostly C's  
Mostly D's  
Mostly F's

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$F_{fb_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to individual  $i$  being in a battalion  $b$  with function  $f$  (where the sum of the  $F$ 's over all values of  $f$  is zero), where the battalion functions in the sample are as shown in Table 4;

$H_{1d_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to individual  $i$  being in division  $d$  (where the sum of the  $H$ 's for all divisions  $d$  is zero);

$H_{2g_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to individual  $i$  being in brigade  $g$  within his division (so that the sums of the  $H$ 's over the brigades  $g$  within each specific division are all zero);

$H_{3b_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to individual  $i$  being in battalion  $b$  within his brigade (so that the sums of the  $H$ 's over the battalions  $b$  within each specific brigade are all zero);

$H_{4c_i}^{(I)}$  is the effect on individual  $i$ 's score on index  $I$  due to individual  $i$  being in company  $c$  within his battalion (so that the sums of the  $H$ 's over the companies  $c$  within each specific battalion are all zero); and

$E_i^{(I)}$  is the residual individual effect which differentiates individual  $i$  from the other individual's in his company on index  $I$  (so that the sums of the  $E$ 's for the individuals  $i$  within a particular company are all zero).

The effects in the model were, for most purposes, treated in six groups, or stages, corresponding to the total set of demographic effects (referred to as stage 1), the battalion function effects (referred to as stage 2), the division effects (referred to as stage 3), the brigade effects (referred to as stage 4), the battalion effects (referred to as stage 5), and the company effects (referred to as stage 6).

In some areas, the experimental design confounded certain effects. For example, in the wave 2 data there was, after data

TABLE 4  
BATTALION FUNCTIONS

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Aviation
Engineering
Military Intelligence
Military Police
Armor
Infantry
Cavalry
Signal
Field Artillery
Maintenance
Medical
Supply and Transportation
Personnel and Administration

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filtering for validity, a division in which responses were available from only one battalion. Since this kind of situation did not permit the analysis of the hierarchical effects, this unit was dropped from the analysis. Further, there was a function which was represented by only a single battalion. In this and other similar instances, model fitting was done in a conservative manner (with respect to hierarchical unit influences), so that all effects which could be attributed to demographic or battalion function effects are attributed there rather than inflating the estimates of unit effects beyond conservative minimum estimates.

Confounding and related problems also explain the selection of the demographic and function variables examined (shown in Tables 3 and 4, respectively). Other demographic characteristics of possible interest were available in the data set, but were highly correlated with the set chosen. For example, over 95% of the variability in rank of respondent was associated with variation in the demographic variables shown in Table 3. Accordingly, rank was not used as a demographic variable, although its effects are contained in the overall demographic effects. Because of these confoundings, the total demographic effects measurements are more meaningful than the possible attribution of effects to individual demographic causes, which suffer from being confoundings of several possible causes.

The same problem occurs with the unit function dimension. Although described in terms of "battalion function", the dimension under examination is in fact unit function, and confounds brigade, battalion, and company function, and in some cases division type. In the units studied, infantry battalions occur in infantry brigades. Rifle companies occur only in infantry battalions. The mix of battalion types in different division samples is significantly different. In many cases, this confounding is inherent in the basic rules of Army structure; in a few, it may be an artifact of the sample. Whatever the cause, it is impossible to separate these

confounded effects. Further, although identified as battalion function effects, the effects measured in stage 2 cannot be added to the battalion effects of stage 5 to get a total battalion effect. Rather, the stage 1 effects actually represent a composite of division, brigade, battalion and company level effects associated with the role or function of the unit and separable from the unit-unique effects of stages 3 through 6.

Although many of the possible company-function effects have been included in the stage 1 analyses, it is possible to identify an additional dimension of unit function that occurs in a unique fashion at the company level and is not confounded with higher-level unit effects. This dimension is the distinction in unit function between line units and headquarters or support units. For example, in an infantry battalion, rifle units are line units and headquarters units are not. Using such classification of companies into line and non-line companies, an additional set of analyses were conducted in which the sixth-stage effects (company effects) were subdivided into company-function other company effects. As with the results of the main six-stage analysis, the results of this additional analysis are described below.

Within the overall model, the effects in each of the six stages were tested for statistical significance using standard normal-theory F-tests. Because of the large number of index-stage combinations, the level of the significance tests was set to 0.005. (The test level refers to the probability that an effect would be identified as present in cases where in reality there was no effect.) These tests were performed for the data sets from waves 2, 3, and 4. In addition to the significance tests,  $R^2$  statistics (coefficients of partial determination) were computed and are presented for each stage, where each statistic represents the proportion of the total population variance reduced by the effects in the stage, conditional on (i.e., after removal of) the effects determined for all lower-numbered stages.

In addition to the analysis of the data at the individual level (in which, as will be seen in the following section, the  $R^2$  coefficients are quite small due to the fact that the differences in index scores associated with unit associations are small compared with individual variability) some discussion is included in the next section of the meaning of the results in terms of the effects on unit mean scores on the indices. In addition to the discussion of results which follows, Appendix I contains a complete presentation of the means and standard deviations of the index scores for each unit (at each level) and for demographically classified data.

### Results

Appendix B summarizes the results of the six-stage analysis for waves 2,3 and 4. Coefficients of partial determination are presented for each stage, with indications of their levels of significance.

The original analysis was run on individuals, to more easily interpret and remove demographic effects. As can be seen from the detailed data in Appendix B, the resulting coefficients of partial determination are quite small for this analysis, reflecting great individual variation within companies. This does not, however, diminish the statistical significance or meaningfulness of the differences among units, both at company and higher levels. In other words, even though a great deal of within-company variance exists, for most of the factors, company means differ significantly and meaningfully.

In order to see this numerically, consider index 810 on wave 3. The within-company standard deviation of scores on this index was 0.78. Company sample sizes were approximately 25. Accordingly, company means were measured with standard errors of about 0.15 (and measurement variances of approximately 0.023). The variance of the measured company means was 0.1067, suggesting a true standard deviation of company means (after allowance for the measurement error) of

.29, which is clearly extremely significant and meaningful. The differences between companies are about one-half as great as the differences between individuals.

(It must be noted that this example: (1) addresses all differences between companies, from all causes, and not merely the company-specific effort, and (2) is slightly inexact since the actual company sample sizes vary, rather than being a constant 25. The example, is, however, accurate in its basics and shows clearly why the very small  $R^2$  coefficients are both statistically significant and indicative of meaningful effects.)

The significant  $R^2$  coefficients from the individual analyses followed a definite pattern. Within the hierarchical levels, company effects were generally the strongest with division effects also present for many indices. Battalion and brigade effects had little significance. Demographic and function effects, present for almost all variables, were of magnitudes comparable to company and division effects, in that order.

Analysis on company means (as described above) would not alter the relative effects of function or any of the hierarchical factor levels, but it would increase their magnitude relative to demographic effects. This is because there is no variance on these factors within companies. On the other hand, the relative effects of the demographic factors, as compared to the other factors, would decrease because of within-company variation on demographic measures which tends to diminish these effects across companies. If companies were 'all female' or 'all hispanic' (as they are all a particular function or division), then the demographic effects on company means would increase in the same way that the function and hierarchical effects increase.

In general, the relative magnitude of hierarchical (and function) effects, as compared to demographic effects, would increase by a factor of approximately the square root of true company size. Such an analysis, on company means, would not change the significance of



the factor effects, but would dramatize the organizational level effects as compared to the demographic effects.

The following sections of this chapter present some comments on the analysis details associated with each of the datasets for each wave, discuss some of the specific results found and summarize the major conclusions of the analysis.

#### Analysis Details

The standard treatments given data limitations and inappropriate survey responses are discussed elsewhere in this report and will not be repeated here. In addition to the screening of respondents described in chapter 2, however, one extra screening step was taken out of necessity. The battalion code was used to identify function, division, brigade, battalion and company. Respondents with invalid battalion codes could therefore not be included in this analysis. One-battalion brigades were analyzed at the brigade level, since the battalion analysis was a comparison within brigades.

The wave 2 survey questionnaire did not include questions comprising nine of the twenty-eight indices. Also, since the wave 2 analysis was basically for confirmation of results obtained in the analyses of waves 3 and 4, and because of time constraints, the full analysis was not completed for the three survey items which were on the Version II questionnaire only. The full analysis for wave 2, then, was run on sixteen indices.

The wave 2 data included a battalion which was a one-battalion division. While one-battalion brigades were included in the analysis, at the brigade level, it was decided not to include this one-battalion division. (Exclusion of this battalion resulted in an additional one-battalion function for this wave.) Some one-company battalions, included in the analysis down through battalion, could not be included in the company analysis (since that was a comparison within battalions). This treatment is consistent with the handling of one-battalion brigades in all three waves.

Of 6033 wave 2 survey respondents, 5559 passed all screening tests and were included in the major portion of the analysis. The company analysis included 4907 of these respondents.

Of 6065 respondents to the wave 3 survey, 4501 reported valid battalion codes and were included in the major portion of the analysis. The company analysis included 4392 of these respondents. There were no cases of one-company battalions or one-battalion divisions in the wave 3 dataset. One-battalion brigades were treated at the brigade level, as described above. Case loss at the company level was due entirely to missing data.

Of 5043 respondents to the wave 4 survey, 4623 reported valid battalion and company codes and were included in the analysis. As in wave 3, there were no cases of one-company battalions or one-battalion divisions in wave 4.

#### Specific Results

The statistical significance of the six stages, and of individual demographic factors is indicated in Appendix C for each wave. A '+' indicates that significant factor effects are present at the .005 level. The presence of significant factor effects indicates that an individual's status on the given factor influences his index score. For instance, presence of a 'sex effect' on 'willingness to deploy' means that men and women significantly differ in their responses to the questions comprising this index. Some of these effects are discussed in the following paragraphs, organized in terms of the six stages.

#### Demographic effects

Demographic effects were found to be significant for every index in each wave except for 'ascribed influence' in wave 3. As presented in table 4.1, the demographic effects are really a set of factors relating to: sex; marital status; housing; race; education; and school grades.

Educational level of the respondent was the most consistently significant demographic effect. Responses significantly differed on

the basis of education on every index, in all three waves, except 'organizational climate B' and 'ascribed influence'.

Race of respondent was also of consistent significance for every index except 'army reference group' in wave 2. In waves 3 and 4, race was a significant factor for over half of the indices.

Sex, marital status, housing and school grades contributed effects less often, but in some consistent patterns for all three waves:

Sex had a significant effect for 'organizational climate B', 'willingness to deploy' (all three waves), and 'effectiveness' (waves 3 and 4);

Marital status had a significant effect for 'motivation' and 'career intentions' in all three waves;

Housing status had a significant effect for 'job challenge', 'motivation' and 'career intentions' in all three waves; and

School grades had a significant effect for 'motivation' in all three waves.

#### Function

Function effects, while seldom large, are significantly present for more indices than any of the hierarchical levels of division, brigade, battalion and company. The only two indices for which function never showed up as having a significant effect are 'army reference group' and 'ascribed influence'.

Function is somewhat confounded with battalion because some functions in all waves were represented by only one battalion. The results, however, indicate that this confounding did not produce the significant results for this factor. It is therefore believed that the observed function effects are correctly attributable to function.

#### Division

Division effects were present for about half of the indices in wave 4 and most of the indices in waves 2 and 3. Division effects

showed up consistently, in all three waves, for the indices concerning 'group cohesiveness', 'willingness to deploy' and 'effectiveness'. While the adjusted coefficients of partial determination for division were generally not as high as those for company and function effects, the consistency of their significance indicates that division affiliation is a factor which influences command climate as measured by the survey indices. It is also worthy of note that a division effect will influence many more individuals than a company effect.

#### Brigade

Brigade effects are not present for most of the indices. The only index for which a consistent brigade effect was found in all three waves is 'effectiveness'. In general, it would appear that brigade affiliation has limited effect on the indices of command climate.

#### Battalion

Battalion effects, although somewhat more prevalent than brigade effects in wave 3, are also not present for most of the indices. Consistent effects, in all waves, were not found for any of the indices. Battalion affiliation does not appear to be a major factor in determining command climate as measured by the survey indices.

#### Company

The greatest  $R^2$  for organizational effects were found at the company level (where the associated degrees of freedom were also greatest). Company effects were significant for 50 percent of the indices in wave 3, 53 percent in wave 4 and over 80 percent in wave 2. More important than the number of indices in which company effects were found is the magnitude of those effects. In the analysis on individuals, the company effects, after all other effects had been removed, were often stronger (in terms of  $R^2$ ) than the demographic effects. Company affiliation, for most of the indices where

it was significant, accounted for the greatest portion of explainable variance on index scores of individuals. Individual variation within companies was great, of course, as would be expected for any measure taken on a group of individuals in almost any setting. The measured company effects were analyzed to separate any possible inclusion of company function (line vs. non-line) effects. The company function was statistically significantly different than zero in only one-third of the indices (while company effects were present in over half). When company function effects were demonstrably present, they were very small compared to other effects: in no case was more than 10% of the  $R^2$  for company due to company function effects. This result indicates that the line versus non-line company function is not a major determinant of the company effects. The detailed data is contained in the tables in Appendix B.

### Conclusions

The three waves of survey data analyzed in this portion of the project were collected over a time span of one year. Consistent results for all three waves indicate that some positive conclusions can be drawn:

- 1) Company affiliation has the most significant organizational level effect on most of the indices;
- 2) Division affiliation also has a consistent effect on many indices;
- 3) Demographic factors do have a significant effect on command climate (as measured by the survey indices), with the educational level and race of the individual the most consistently significant demographic factors among those examined (rank was not examined, but correlated extremely highly with educational level and should therefore be considered a possible determinant);

- 4) Unit function significantly affects command climate index scores;
- 5) Brigade and battalion affiliation have limited influence; and
- 6) A great deal of within-company individual variation exists that is not explained by any of the factors examined.

Chapter 5  
A TEST OF TRADITIONAL AND COLLABORATIVE MODELS  
OF ARMY FUNCTIONING

Introduction

One of the tasks which this research project undertook was to examine alternative models of Army unit functioning and to identify, if possible, a model most conducive to unit effectiveness. In the sections which follow, we shall first state briefly the theoretical rationale laid out in the first technical report (Bowers & Rcsc, 1979), then describe the methods employed to test different models, and next present the evidence resulting from those tests. Finally, the results will be discussed and summarized.

Alternative Models of Functioning

Two basic dimensions run through the organized lives of human beings. One of these dimensions is energy -- the amount of effort committed to organized activities. The other is direction, the purposeful nature of activities themselves. From these two basic dimensions, whole models of these processes may be constructed.

In work organizations, whether military or civilian, any such model is an abstract picture of precisely how energy is induced and direction provided, a series of cause-effect sequences which result in effectiveness.

In more primitive times, both energy and direction components of organized human life were woven into the very fabric of societal structure. Energy devoted to common tasks came from ties of kinship and religion, and the basis for it was laid in early socialization. Direction came from the strongest, wisest, or at least the most powerful, and its basis was normally provided by those same ties of kinship and religion.

An abrupt change in this situation came to Western civilian society with the industrial revolution. Urbanization and mobility wiped out the orienting and stabilizing effects of kinship. Secularization, education, and the advance of science made religious doctrine less influential. Finally, the increasing technical complexity of society pushed toward a meritocracy, and the rise of democracy joined this in making direction subject to more or less continual question.

In the military, a coincident change occurred with the French Revolution, the rise of the nation state, mass national armies, and the Napoleonic Wars. Prior to that time, armies were more often than not the "playthings of kings," owed their allegiance to the sovereign and were used by the latter primarily in dynastic wars. With rare exceptions, the nation itself, as such, was relatively unimportant. Indeed, it was observed that Prussia, with its superb army, was not a nation, but an army that used a particular piece of geography as a billeting area.

The rise of the nation-state, nationalism, and the rapid advance of technical weaponry changed that rather dramatically. Energy in military activities came to be provided by commitment to the nation (patriotism), rather than by feudal ties of fealty based upon fixedness of status in life. Mass armies involved the whole nation, and technical weaponry (in an age of still less than universal education) pushed the providing of direction toward a meritocracy of the technically highly trained, supported by an implementing bureaucracy.

It is useful to note that these fundamental changes, in civilian as well as military organization, which took place at the close of the 18th and early in the 19th centuries, themselves stemmed from fairly basic societal changes. Perhaps at their root they were economic, in the sense that the factory system and the rise of a commercial class (a) weakened the traditional feudal ties of community and religion, and (b) redistributed resources such that an imbalance of power and influence existed between the old aristocracy and the rising bourgeoisie. The political equalitarianism of the French Revolution, which was produced by these changes, led to a reaction by the remaining traditional states, and an attack upon France itself. France's



reaction, in its turn, led to the rise of modern nationalism, the mass army, and the start of high technology warfare.

This historical observation is of more than curiosity value, since much the same thing, if in less sudden form, has happened again in the years of this present century. Mass education, the development of social welfare legislation, and the revolution in expectations have created pressures which have rather dramatically restructured society (particularly American society). Organizationally it has led to demands for involvement -- a say or a voice -- in issues of direction. The energy component faces pressures as well. Role ties are no longer so automatic. A fairly sophisticated population no longer takes for granted the competence of its leaders, civilian or military, and almost instant media communication reveals much of what is questionable, but little that is not. Loyalty and commitment must therefore be constantly regenerated.

Despite these changes in how an organization cultivates energy and instills direction -- which is an issue of what form its management system takes, there is an issue of the consequences of these processes which remains central. Organizations, as collective entities, do something, and that something (or things) redounds positively or negatively. When we look at these consequences and attribute value from some scale of goodness or badness to them, we commonly call the resulting comparison the organization's effectiveness.

Each of these primitive constructs -- energy, direction, the management system, and effectiveness -- becomes quite complex when we examine its necessary properties in detail. Their impacts upon one another -- the ways in which they interact in the real world -- add yet other degrees of complexity. To define a model of organizational functioning appropriate to the Army requires that we study each and all.

In recent years, much has been written in the organizational literature about the way in which organizational processes are directed and controlled, that is, about basic management models. In these hundreds or thousands of conceptual and empirical pieces, different terms and constructs have been used to define or amplify the primitive constructs, energy and direction.

A close scrutiny of the literature suggests that, for several decades, much of the discussion has identified two basic or "pure" forms and one, or perhaps two, variations or combinations of them. The two basic forms may be for convenience labelled Directive and Collaborative.

#### The Directive (Traditional) Management System

The Directive Management System is one in which control is exerted from the top down, with managers and supervisors largely responsible for directing their subordinates in performing designated tasks. In its most extreme forms, it is analogous to Likert's Systems 1 and 2, McGregor's Theory X, or Blake's 9-1 style. It should be noted that this management form is quite consistent with the practices which necessarily emerged in the early 19th century, and might therefore be termed "traditional". While those who advocate it as an appropriate style may or may not believe the personal value positions which McGregor attributed to Theory X (e.g., that persons are lazy, will get away with doing as little as possible, and the like), there is a viewpoint inherent in this model which values topside competence. Briefly, it is that events, processes, and hardware in organizational life are so complex that only those persons whose training and experience are great and whose positions are at a high level in the conventional pyramid can provide adequate direction. Complexity requires coordination, and coordination can only be provided by having those with great knowledge and skill build it into the overall plan. An organization is therefore somewhat like a machine, structured around the technology and standard work processes. Its nature, structure, technology, and those processes are determined by those at the top, with high technical and professional training.

The technical work design therefore drives the system. The necessary flow of events leading to effectiveness is prescribed by the technical/operational work structure laid down by higher echelons. The responsibility of lower echelons of supervision is to make certain that assigned individuals perform their prescribed tasks in the proper way at the proper time. Coordination of functions is thus built into the system, through structure and roles, provided that lower echelons of supervision perform their leadership and command tasks as prescribed.

In this model, leadership is therefore a restricted art, and only some persons are felt to be capable of exercising it. It is role dependent, in the sense that the ability to do so depends upon having requisite authority, having technical competence in the substance of command, upon the ability to keep subordinate performance under adequate surveillance, and upon the ability to implement rules and to reward and punish justly and fairly. Charisma -- the ability to inspire -- is partly a matter of personality and partly a matter of experience and training.

#### The Collaborative Management System

Considerably in contrast to this is the Collaborative Model, which has developed from organizational practice in the recent decades of rising education, economic security, and growing expectations. It holds that persons express what at root are common needs in widely different forms. Given mobility and the opportunity for widely different experiences, there is not likely to be "one best way" to perform any specific work task. Because of the rapid pace of change, and the wide variations which are likely to occur in interfaces between man, machine, and situation (man-man, man-machine, machine-machine, man-situation, machine-situation, and man-machine-situation), no centrally prescribed set of procedures is likely to function optimally across the board. Instead, the know-how, information, and perspective necessary for effective functioning are likely to lie closest to the tasks themselves -- that is, in those who perform them.

According to this model, both direction and energy are provided by the same mechanism, a process of joint leadership which integrates the goals of members into the objectives of the organization, provides coordination by group linkages of this kind at all levels, and opens the channels of communication in all directions to accurate, parsimonious transmission of information. Stated succinctly, it holds that locals, not centrals, have the real know-how necessary to get the job done, and that they will devote energy to doing so if they have collaborated in determining how it will happen.

Therefore, this model advocates a management system in which control is shared at and across all levels, with managers and supervisors responsible for generating and guiding an effective process and for linking their units upward and laterally. In its present form, it is identified with Likert's System 4, McGregor's Theory Y, or Blake's 9-9 style.

## Extensions To Military Organizations

### The Traditional Military Organizational Model

The traditional military organizational model is a variant on a classical form. The energy, or motivational, component of organizational functioning is presumed to come from the built-in propensity of human beings to respond to ascribed influence (legitimate power, reward power, and coercive power, perhaps collectively termed "authority"). This energetic component is distributed through a hierarchy. The substance of what is done is determined at the top, and is governed (or enforced) by rules, standardization, and surveillance or control systems.

However, a motivational variant occurs in the military version of the traditional model. Through the exercise of authority, strong limitations (discipline) are placed on individual behavior, in favor of group behavior directed toward demanding, physically strenuous performance. This builds group spirit, or loyalty to unit and Service, which in turn leads to group accomplishment. Finally, outcomes result in the form of morale, mission effectiveness, and such individual, positive effects as self-confidence.

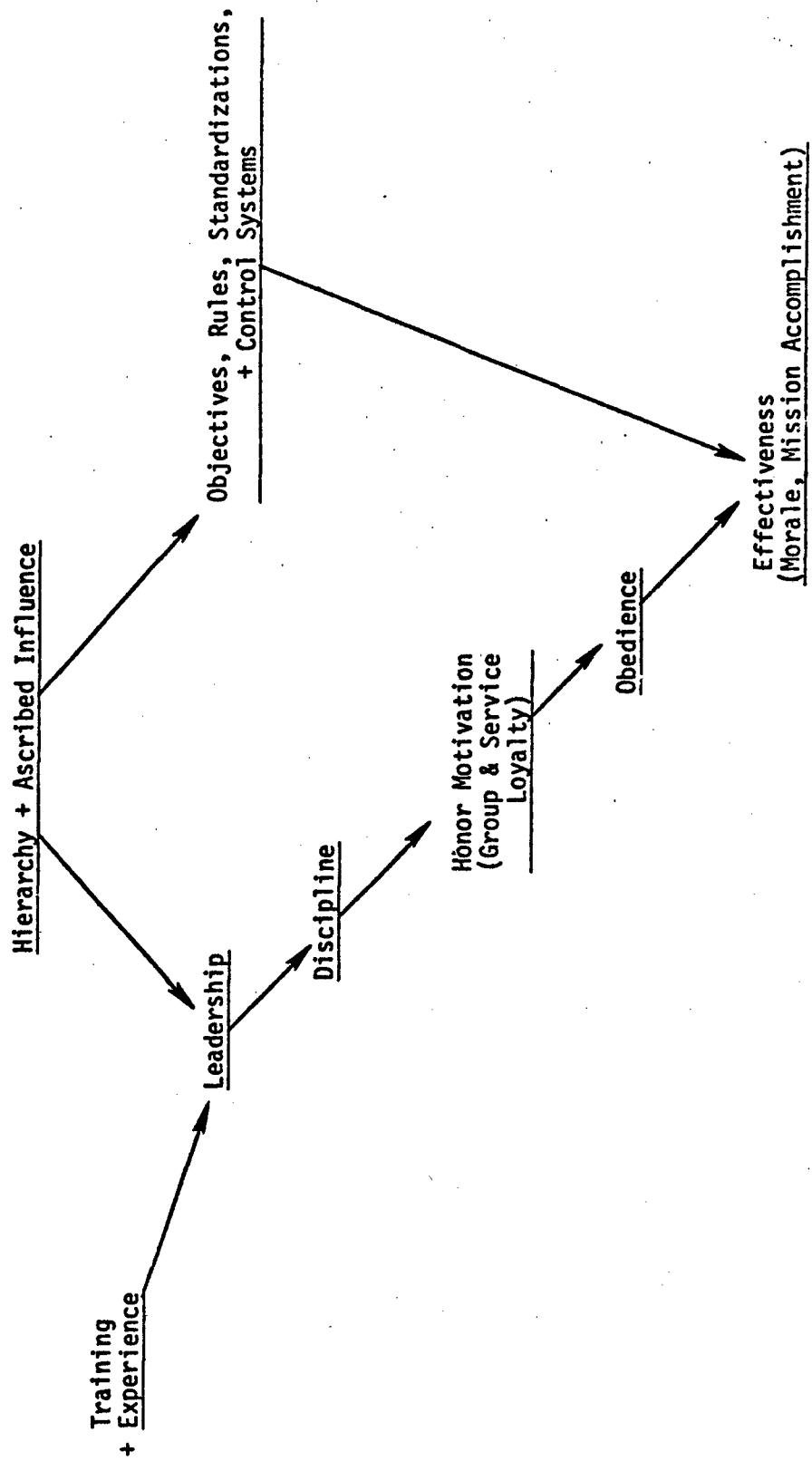
In a first, simple form, the traditional military model might appear as it does in Figure 2. Working backward in the model, we might arrive at the following general propositions:

- . Where rules and standards are lacking or are not clear and enforced, effectiveness will be low.
- . Where obedience (compliance) is low, effectiveness will be low.
- . Where there is high group and service loyalty (honor motivation), there will be a high level of compliance (obedience).
- . Where there are supervisory styles based upon ascribed influence, there will be effective discipline.\*
- . Training and experience will enhance the ability to lead from an ascribed influence base.

---

\*The concept "ascribed influence" and "incremental influence" are drawn from the writings of Katz and Kahn (1978). Ascribed influence is influence based upon position -- the effect of the ability to reward and punish, plus respect for legitimate authority. Incremental influence refers to increments built by the supervisor as a role occupant, through expertise and referent power.

Figure 2  
The Traditional Military Model



There are, in addition, several corollary propositions that may be derived:

- . Without respect for rank and authority, missions will not be understood, rules will be unclear or ignored, standards will not be adhered to, and control systems will function poorly, if at all.
- . In the absence of mission clarity, clear rules and standards, and effectively functioning control systems, morale will be low and mission accomplishment will be poor.
- . If rank and authority are not respected, discipline will break down.
- . Ascribed influence will be more effective than incremental influence in maintaining discipline.
- . If discipline is not maintained, group and service loyalty will decline.

#### The Collaborative Model

Quite different in form is the Collaborative Model of system management, which begins by viewing the organization as a network of overlapping, interlocked groups. Leadership is regarded as a behavior form, not exclusively an attribute of a supervisory role. As such, it may occur among subordinates toward one another (peer leadership), as well as from supervisor toward subordinates (supervisory leadership). Conceivably, although less commonly conceptualized in that way, it could occur from subordinates toward the supervisor as well. However, because of the critical linkage role played by the supervisor, and the visibility of his or her position, supervisory leadership is seen as one of the important causes of peer leadership. What the supervisor does appears in a "multiplier" way in the behavior of his subordinates. Group processes -- attributes of the group itself, such as group loyalty -- result from the combination and interplay of leadership behaviors within a set of given conditions called the group's "organizational climate".

These conditions, themselves the product of the functioning of superordinate groups, are, for any focal group, causal variables which delimit and influence that focal group's functioning. Hierarchy is important primarily through its linkage of overlapping group memberships and roles. Organizational

control consists, not of devices and procedures by which superiors keep subordinates under surveillance, but of the total fund of reliability built into the system through felt accountability at all levels and the accurate functioning of information systems which provide self-guidance through feedback.

At the effect end, effective leadership and group processes produce a series of outcomes: (1) performance, including for upper echelon groups a further refinement of organizational climate for groups below; (2) goal integration, the alignment of member's personal goals with organizational objectives; and (3) satisfaction or morale.

In form, this model might be diagrammed as it is in Figure 3. The model thus stated generates the following general propositions:

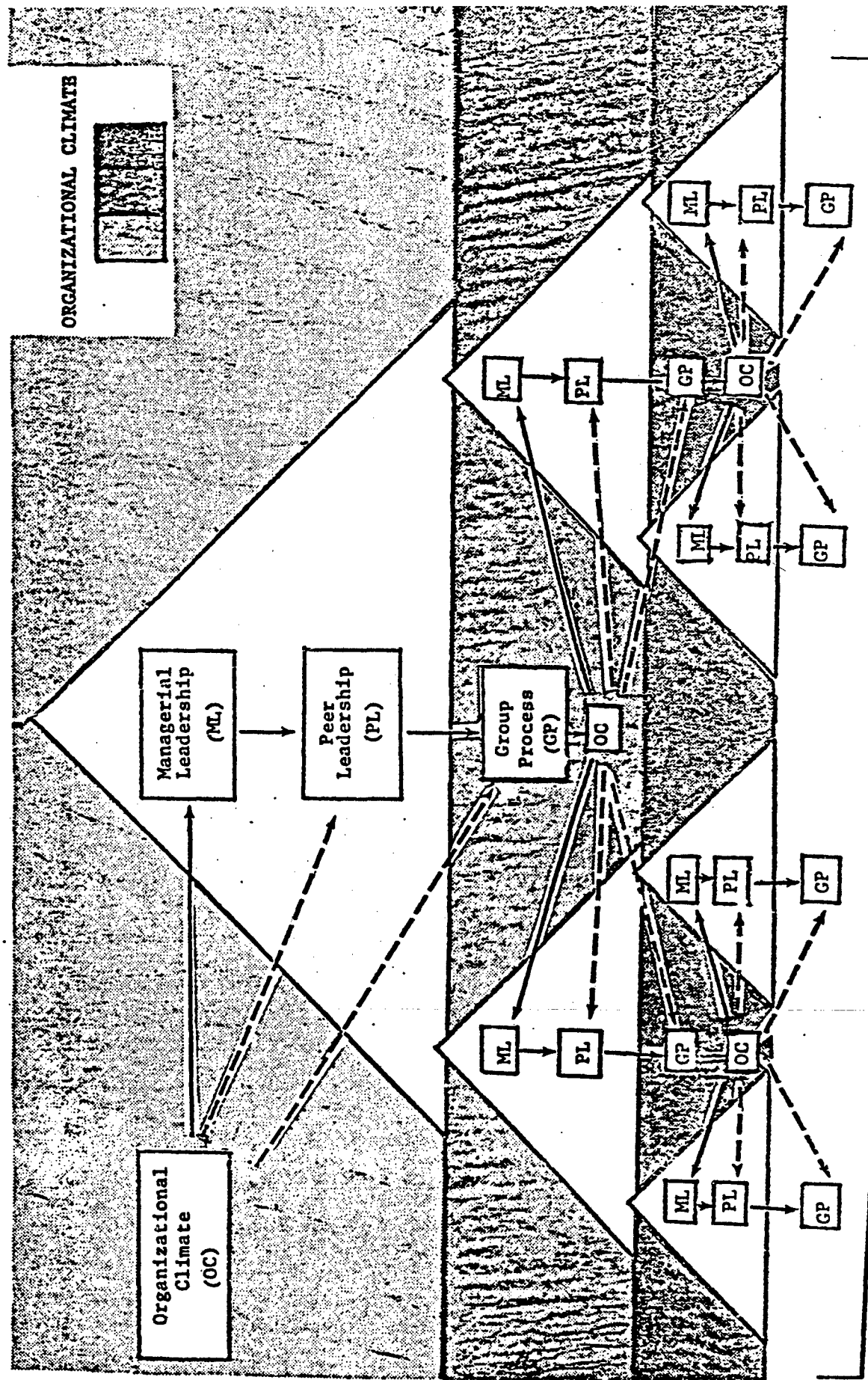
- . While there may or may not be any direct correlation among performance, satisfaction, and goal integration in any specific instance and at any particular point in time, they are coordinate outcomes of the same sets of conditions -- the behaviors and processes of the functioning work group.
- . Effective group processes, and therefore high group commitment and loyalty, will result from peer and supervisory leadership processes which are collaborative.
- . Group processes and leadership behaviors will be in substantial part determined by the collaborative character of the organizational climate in which they occur.
- . Organizational climate will be in substantial part determined by the collaborative behavior and functioning of superordinate groups in the hierarchy.

Beyond this, there are a number of corollary propositions that follow from the above:

- . Groups and organizations will perform most effectively when differences in rank and status are minimized.
- . Mission clarity, requirements, and standards will be most clearly understood and observed when superordinate echelons function collaboratively.
- . Organizational control will be highest when relationships and processes at all relevant levels are collaborative.

Figure 3

The Collaborative Management Model





- . Incremental influence -- the influence which a supervisor builds upon an expert and referent base -- will be more effective than ascribed influence in building group processes and positive outcomes.
- . Discipline results from collaborative mutual commitment, not from the external setting of arbitrary limitations.

### Discussion and Integration

The preceding sections have presented an extensive discussion of major concepts underlying two models potentially appropriate to Army functioning. We have described a small portion of the historical context essential to an understanding of the societal forcefield within which the problem currently occurs.

Perhaps most central to the task of testing these models is a statement of the conditions and processes assumed by the alternative management models. In doing so, it is important to recognize that each model and its advocates believe their assumptions -- about history, environment and human nature -- to be accurate reflections of the world as it really is. The Traditional model, by its very nature, assumes that its precepts are correct and that those of the Collaborative model are in error. Similarly, the Collaborative model intrinsically rejects as incorrect the assumptions of the Traditional model.

In very global terms, both of these models appear to us to rely upon the same general algorithm, presented in Figure 4. An organizational climate, of some structural or processual composition and containing basic conditions, policies, and practices, is seen as contributing to, leading to, or encouraging two things: leadership behavior at lower levels and Reliability or predictability in what transpires. Leadership, in its turn, is viewed as building Group Loyalty which contributes as well to Reliability. From the latter comes effectiveness of the subordinate units and, by a process of aggregation, of the system itself.

If both models share this highly general schema, they scarcely define the component entities in the same way. Indeed, they describe those necessary parts in almost exactly opposite terms, as the summary in Table 5

Figure 4  
General Model of a Focal Unit

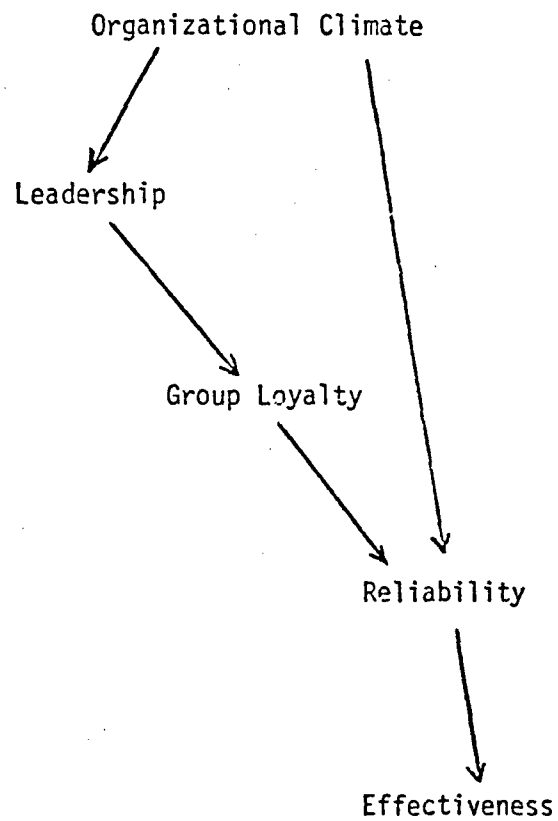


Table 5

## Comparative Characteristics of Directive and Collaborative Models

Traditional Model

**Climate** - Structured, programmed to fit a technical work flow with predetermined decision rules, contains rules and standards, a hierarchy of substantial status differences, and impersonal control systems which report to upper levels of the governance structure. Coordination occurs by having been built into the structure, and is sustained by vertical linkage of an authority/accountability kind.

**Leadership**-On the task side, is of a deviation/surveillance form, transmitting orders and monitoring to see they are carried out. On the interpersonal side, it consists of minimizing interference from non-task related human factors, administering rules fairly, and cultivating goal integration (motivation) by socialization mechanisms. Leadership is effective only when it comes from a person in a position of formal authority, and more when it is based upon ascribed influence (authority, rewards and strict enforcement) than when it is based upon incremental influence and the group's own norms.

Collaborative Model

**Climate**-Takes the form of processes designed to encourage open and accurate information flows, pooled knowledge, and shared determination of ways to meet requirements, Emphasizes objectives or end states, rather than rules or standard ways of meeting them. De-emphasizes status differences, and sees control as coming from shared commitment with informative feedback to members themselves. Coordination occurs by having been built into the processes of collaborative linkage, not into the work structure. Accountability is mutual or horizontal, as much or more than vertical.

**Leadership**-On the task side, consists of serving as a resource to facilitate the doing of the work, and as a link-pin, representing upward and laterally, as well as vertically. Builds motivation (goal integration) by displaying high personal standards and by accommodation mechanisms such as guiding participative decision processes on how to go about meeting the group's required objectives and by helping to redesign jobs to better fit members' various capabilities. On the interpersonal side, provides interpersonal support and encourages teamwork. Relies upon incremental, more than ascribed, influence, and sees leadership as a set of behaviors shared by all but triggered by the formal supervisor.

Table 5 (continued)

Traditional Model

Group Loyalty-Consists principally of members' identification with the group and the larger entity, such as the service. It comes from enforced discipline and from the group's past experience in having been constrained to perform difficult tasks required from above.

Reliability-Comes from obedience and from strict enforcement of the structural and procedural rules and standards, monitored from above by impersonal control systems.

Effectiveness - Consists of ability to perform required tasks in prescribed way.

Collaborative Model

Group Loyalty-Consists of members' identification with the group and the larger entity, but more importantly of the group's collective capacity to adapt and function effectively as a team. It comes from having built teamwork, involvement, participation, and a shared sense of "ownership."

Reliability - Comes from shared commitment and strong feelings of mutual accountability, plus feedback to members themselves from information system.

Effectiveness - Consists of the ability to shoulder and accomplish any required tasks, whether signaled from the rest of the system or encountered unexpectedly in the environment without the system's prior reaction.

indicates. In the Traditional model, climate is structural, prescriptive and controlling. Leadership is instrumental, directive, and requiring. Group Loyalty comes as a response to the interplay of requirement and limitation, while reliability comes from the effective enforcement of the plan.

By way of contrast, the Collaborative Model rejects these components as defined, at almost every step of the way. Climate is seen as containing processes which permit and encourage effective responses, not structured requirements that things occur in a particular way. Leadership is seen as a behavior form, valuable to the extent that it multiplies from the formal link-pin (the "leader") to all members. Group loyalty is seen as a combination of characteristics of the group as a unit, including, but not limited to, pride in membership. Finally, reliability is seen as coming from the concerned attention of many or all for the effectiveness of something they feel committed to and informed about, not from the enforcement of standard rules or the "snitching" of control systems.

Effectiveness in the two models carries a somewhat different flavor as well. In the Traditional system it consists of the accomplishment of designated milestones -- whatever they may be as determined by the technical and control systems. Flexibility and coordination stem, not from processes below or throughout, but from the top stratum's ability to scan the environment and adapt the plan. In the Collaborative system, effectiveness is viewed in more general terms: as comprising the attainment of objectives, to be sure, but as more importantly the capacity to cope appropriately and more or less independently with whatever comes along. Flexibility and coordination are thus viewed as part of the very processes making it up at all levels.

Testing the appropriateness of these two contrariant models for the situation faced by the Army involves, first, identifying a series of measures which may fairly operationalize the constructs contained in each step by each model. Once this is done, and their adequacy tested, it requires that the impact at each stage of each model be assessed by multivariate methods. At present, it would be fair to say that the weight of available empirical evidence suggests that the Collaborative model might be the better fit. However, few available studies have dealt specifically with the Army and its world, and very few have been longitudinal.

Therefore, the present study constitutes, in our view, a rather unique opportunity to examine how well each of the models -- or conceivably a synthesis of the two -- fits an Army situation.

## 5.1 Measures and Procedures

### Measures Employed

Two different sets of information were used to test the contrasting models. The first set consisted of questionnaire data from personnel in nearly 250 companies, in 50 battalions, and multiple waves (time points of collection). Since these measures are described elsewhere, no attempt will be made at this point to describe them in detail.

The other set of data consisted of measures of unit effectiveness. At the company level, effectiveness measures consisted of within-battalion ratings and rankings of those companies, weighted by similar ratings and rankings of battalions within brigades. In addition, battalion scores on more concrete measures (such as reenlistment rate, readiness, and the like) were imputed to companies comprising them.

### Analytic Methods

In general form, the analytic strategy consisted of working from correlational analyses using single wave data at the individual respondent level to a system of structural equation models at both the individual and the company level, to a series of cross-wave analyses using more than one wave of data. The decision to go no higher in aggregation than the level of the company was made in light of findings (separately reported) from the general linear analysis showing that, of all organizational levels, only the company appeared to contain large amounts of variance.

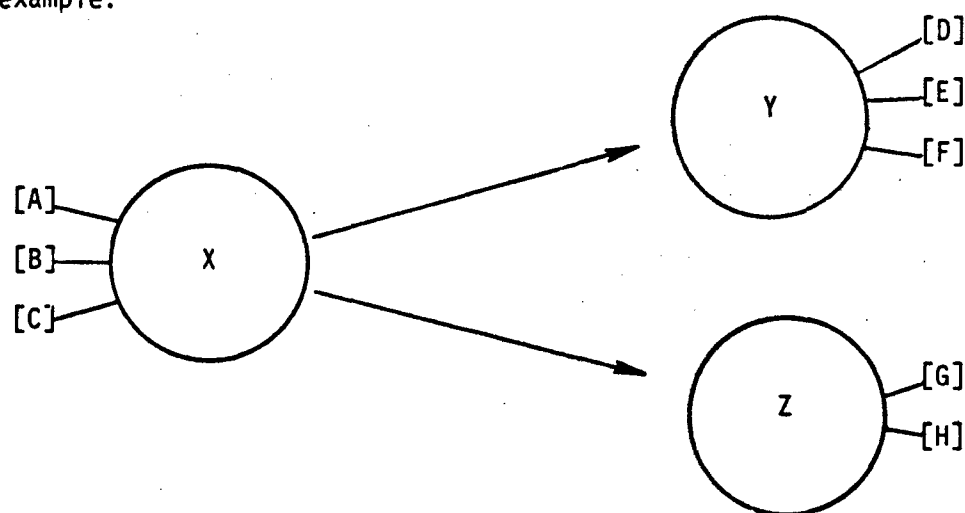
For convenience, the analysis can be viewed as falling into two distinct parts. In the first of these, a set of eight major hypotheses reflecting contrasting propositions of the Traditional and Collaborative models were tested. The method involved the examination of zero-order correlations and the comparison of first-order partial correlations with one another and with zero-order correlations.

From the results of 122 separate tests covering the eight hypotheses, each of the two major models was assessed for its viability when applied to Army settings.

The second stage in the model testing portion of this project involved the estimation of a series of structural equation models. Here, we relied on the maximum likelihood method developed by Joreskog (1973) and made available through LISREL IV (Joreskog & Sorbom, 1978).

At the simplest level, this method solves a series of structural equations among a set of "latent" variables which are made up of the variables which are directly measured.

For example:



A through H are a set of measured variables, represented in this study by the set of indexes and items summarized elsewhere. X, Y, and Z are a set of more general, underlying variables which are defined by groups of these indexes and items. The arrows indicate that in this example, we are examining the hypothesis that X (made up of A, B and C) is the cause of both Y (made up of D, E and F), and Z (made up of G and H).

The criterion for evaluating a model of this sort is how well it summarizes, or fits the actual data. The actual data in this case are a matrix of correlations between all of the indexes or observed measures. The question then becomes: how good a job does this model do of estimating the actual correlations



between the observed measures? If the estimated correlations are close to the actual correlations, then the proposed model can be judged to be a good description of the relationships present among a large number of variables.

The program generates two pieces of information which are helpful in evaluating the "fit" of a model and comparing the "fits" of a number of models. The first of these is an overall measure (chi-square/degrees of freedom), which is based on the difference between the actual and predicted relationship between the measures, and the number of cases, divided by the number of degrees of freedom in the model.

The second piece of information to which we will refer in evaluating the series of models which we have estimated is the matrix of residuals. A residual is the difference between the actual and predicted relationship between each pair of variables. If the residual is low, it indicates that the model has allowed for an accurate estimate of that particular relationship. If a particular residual is high, the model has done a poor job of estimating the relationship between those two variables. Referring to the example above, if there was a very strong relationship between observed dependent variables E and G that was unrelated to X, the resulting residual between these two measures would be very high, indicating that the model had done a poor job of representing the relationship between the two.

Despite the initial complexity of this method, it quickly becomes apparent that it is a powerful tool for summarizing and evaluating the relationships between a large number of variables in relation to a theoretical model. The interest and attention which this method has generated in recent years indicates that it is a highly promising approach to the problems which the present research poses.

This structural equation modeling method will be applied, first, to relationships among measures at the individual respondent level. Major models and potentially more satisfactory alternatives will be tested. An analogous procedure will then be extended to measures at the company level, and then to the inclusion of "hard" effectiveness as well as survey measures.

## 5.2 Results

### Correlational Tests of Traditional Versus Collaborative Models

The first analyses consisted of tests, at the individual respondent level, of a series of hypotheses implicit in the two models. Eight such hypotheses, each placed in the form of contrariant statements, were implicit in the models as outlined above. For each statement, both verbal and partial or zero-order correlational forms are presented. The specific tests conducted for each hypothesis are presented in Table 7.

#### Hypothesis I

Traditional Model: Unit effectiveness comes from group loyalty through obedience.

$$\begin{aligned} \text{UE, GL.OB} &= 0 \\ \text{UE, OB.GL} &> 0 \end{aligned}$$

Collaborative Model: Unit effectiveness and obedience are coordinate outcomes of group loyalty.

$$\begin{aligned} \text{UE, GL.OB} &> 0 \\ \text{UE, OB.GL} &= 0 \end{aligned}$$

#### Hypothesis II

Traditional Model: Unit effectiveness comes from group loyalty through discipline.

$$\begin{aligned} \text{UE, D.GL} &> 0 \\ \text{UE, GL.D} &= 0 \end{aligned}$$

Collaborative Model: Unit effectiveness and discipline are coordinate outcomes of group loyalty.

$$\begin{aligned} \text{UE, D.GL} &= 0 \\ \text{UE, GL.D} &> 0 \end{aligned}$$

#### Hypothesis III

Traditional Model: Leadership leads to group loyalty through discipline.

$$\text{L, GL.D} = 0$$

Collaborative Model: Leadership leads to group loyalty directly.

$$\text{L, GL.D} > 0$$

Hypothesis IV

Traditional Model: Ascribed influence leads to discipline.

$$L_{AS}, D = \text{positive}$$

Collaborative Model: Ascribed influence detracts from discipline.

$$L_{AS}, D = \text{negative}$$

Hypothesis V

Traditional Model: Ascribed influence is compatible with effective leadership.

$$L_{AS}, L = \text{positive}$$

$$L, GL, L_{AS} \leq L, GL$$

Collaborative Model: Ascribed influence is incompatible with effective leadership.

$$L_{AS}, L = \text{negative}$$

$$L, GL, L_{AS} > L, GL$$

Hypothesis VI

Traditional Model: Incremental influence is compatible with ascribed influence.

$$L_{IN}, L_{AS} = \text{positive}$$

$$L_{IN}, GL, L_{AS} \leq L_{IN}, GL$$

Collaborative Model: Incremental influence is incompatible with ascribed influence.

$$L_{IN}, L_{AS} = \text{negative}$$

$$L_{IN}, GL, L_{AS} > L_{IN}, GL$$

Hypothesis VII

Traditional Model: A hierarchical orientation is associated with effective leadership.

$$H_0, L = \text{positive}$$

Collaborative Model: A hierarchical orientation is associated with ineffective leadership.

$$H_0, L = \text{negative}$$

### Hypothesis VIII

Traditional Model: An organizational climate which emphasizes standards enforcement contributes more to unit effectiveness than does one which emphasizes collaborative interpersonal processes.

SE,UE=positive  
SE,UE>CL,UE  
SE,UE>CL,UE

Collaborative Model: An organizational climate which emphasizes collaborative interpersonal processes contributes more to unit effectiveness than does one which emphasizes standards enforcement.

SE,UE=negative  
SE,UE<CL,UE  
SE,UE<CL,UE

Multiple measures (indexes or items) of many of these constructs were contained in the survey. Table 6 indicates the measures for each construct and their composition.

### Results for Hypothesis I

The first hypothesis begins at the end of what the models consider to be the causal stream, namely the immediate precursors of unit effectiveness. In this first analysis, questionnaire surrogate measures of effectiveness were employed as the criteria. The first of these, the Unit Effectiveness Index (UEI), was a four-item index asking respondents to assess the respect with which their unit was regarded on the post, the overall effectiveness of the unit, its effectiveness compared to other units in which they had served, and the amount of improvements needed to make it maximally effective. The second measure was a single item asking Reenlistment Intention (RI).

The substantive issue in question was whether effectiveness thus measured stems more from group loyalty, with obedience as a coordinate outcome of that loyalty, or from obedience itself. With two effectiveness measures and four measures of group loyalty, there were eight tests of these contrasting propositions. (See Table 7.)

TABLE 6  
SURVEY MEASURES OPERATIONALIZING CONSTRUCTS

Construct	Measures	Items Comprising Index
Unit Effectiveness (UE)	Unit Effectiveness Index (UEI) Reenlistment Intention* (RI)	42, 81, 82, 83 84
Group Loyalty (GL)	Group Loyalty Index (GLI) Loyalty to Organization Index (LO) Army/Unit Reference Group Index (AU) Unit Influence (UI)	40, 72, 77 65, 66, 73, 75 90, 91 117
Obedience (OB)	Willingness to Deploy Index (WD)	92, 93, 94, 95
Discipline (D)	Discipline Index (DI) Standards of Discipline (SD)	29, 33 111
Leadership (L)	Leadership Index A ( $L_A$ ) Leadership Index B* ( $L_A$ )	22, 25, 36, 62, 71, 79 27, 30, 32, 35, 43, 54, 60
Ascribed Influence ( $L_{AS}$ )	Ascribed Influence Index ( $L_{AS}$ ) Legitimate Influence (LI)	113, 114
Incremental Influence ( $L_{IN}$ )	Incremental Influence Index ( $L_{IN}$ )	115, 116

\*Items with reverse scale: high score equals low or poor values.

TABLE 6 (CONTINUED)

Construct	Measures	Items Comprising Index
Hierarchical Orientation (HO)	Military Sentiment Index (MS)	107, 108, 109
	Theory X Index (TX)	118, 119, 120, 121
Standards Enforcement (SE)	Standards Enforcement Index (SE)	47, 56
Collaborative Climate (CL)	Climate Index A (CL <sub>A</sub> )	28, 44, 45, 46, 49, 52, 61
	Climate Index B* (CL <sub>B</sub> )	11, 13, 15, 17, 20, 21, 23, 24, 26

\*Items with reverse scale: high score equals low or poor values.

TABLE 7

## HYPOTHESES AND TESTS

## Hypothesis I

- (8 Tests)
- (1a)  $UEI, GLI, WDI=0$  versus  $UEI, WDI, GLI>0$
  - (1b)  $UEI, WDI, GLI>0$  versus  $UEI, GLI, WDI=0$
  - (2a)  $RI, GLI, WDI=0$  versus  $RI, WDI, GLI>0$
  - (2b)  $RI, WDI, GLI>0$  versus  $RI, GLI, WDI=0$
  - (3a)  $UEI, LO, WDI=0$  versus  $UEI, WDI, LO>0$
  - (3b)  $UEI, WDI, LO>0$  versus  $UEI, LO, WDI=0$
  - (4a)  $RI, LO, WDI=0$  versus  $RI, WDI, LO>0$
  - (4b)  $RI, WDI, LO>0$  versus  $RI, LO, WDI=0$
  - (5a)  $UEI, AU, WDI=0$  versus  $UEI, WDI, AU>0$
  - (5b)  $UEI, WDI, AU>0$  versus  $UEI, AU, WDI=0$
  - (6a)  $RI, AU, WDI=0$  versus  $RI, WDI, AU>0$
  - (6b)  $RI, WDI, AU>0$  versus  $RI, AU, WDI=0$
  - (7a)  $UEI, UI, WDI=0$  versus  $UEI, WDI, UI>0$
  - (7b)  $UEI, WDI, UI>0$  versus  $UEI, UI, WDI=0$
  - (8a)  $RI, UI, WDI=0$  versus  $RI, WDI, UI>0$
  - (8b)  $RI, WDI, UI>0$  versus  $RI, UI, WDI=0$

## Hypothesis II

- (16 Tests)
- (1a)  $UEI, DI, GLI>0$  versus  $UEI, GLI, DI=0$
  - (1b)  $UEI, GLI, DI=0$  versus  $UEI, DI, GLI>0$
  - (2a)  $RI, DI, GLI>0$  versus  $RI, GLI, DI=0$
  - (2b)  $RI, GLI, DI=0$  versus  $RI, DI, GLI>0$
  - (3a)  $UEI, SD, GLI>0$  versus  $UEI, GLI, SD=0$
  - (3b)  $UEI, GLI, SD=0$  versus  $UEI, SD, GLI>0$
  - (4a)  $RI, SD, GLI>0$  versus  $RI, GLI, SD=0$
  - (4b)  $RI, GLI, SD=0$  versus  $RI, SD, GLI>0$
  - (5a)  $UEI, DI, LO>0$  versus  $UEI, LO, DI=0$
  - (5b)  $UEI, LO, DI=0$  versus  $UEI, DI, LO>0$
  - (6a)  $RI, DI, LO>0$  versus  $RI, LO, DI=0$
  - (6b)  $RI, LO, DI=0$  versus  $RI, DI, LO>0$
  - (7a)  $UEI, SD, LO>0$  versus  $UEI, LO, SD=0$
  - (7b)  $UEI, LO, SD=0$  versus  $UEI, SD, LO>0$
  - (8a)  $RI, SD, LO>0$  versus  $RI, LO, SD=0$
  - (8b)  $RI, LO, SD=0$  versus  $RI, SD, LO>0$
  - (9a)  $UEI, DI, AU>0$  versus  $UEI, AU, DI=0$
  - (9b)  $UEI, AU, DI=0$  versus  $UEI, DI, AU>0$
  - (10a)  $RI, DI, AU>0$  versus  $RI, AU, DI=0$
  - (10b)  $RI, AU, DI=0$  versus  $RI, DI, AU>0$
  - (11a)  $UEI, SD, AU>0$  versus  $UEI, AU, SD=0$
  - (11b)  $UEI, AU, SD=0$  versus  $UEI, SD, AU>0$

TABLE 7 (CONTINUED)

## Hypothesis II

(Continued)	(12a)	$RI, SD.AU > 0$ versus $RI, AU.SD = 0$
	(12b)	$RI, AU.SD = 0$ versus $RI, SD.AU > 0$
	(13a)	$UEI, DI.UI > 0$ versus $UEI, UI.DI = 0$
	(13b)	$UEI, UI.DI = 0$ versus $UEI, DI.UI > 0$
	(14a)	$RI, DI.UI > 0$ versus $RI, UI.DI = 0$
	(14b)	$RI, UI.DI = 0$ versus $RI, DI.UI > 0$
	(15a)	$UEI, SD.UI > 0$ versus $UEI, UI.SD = 0$
	(15b)	$UEI, UI.SD = 0$ versus $UEI, SD.UI > 0$
	(16a)	$RI, SD.UI > 0$ versus $RI, UI.SD = 0$
	(16b)	$RI, UI.SD = 0$ versus $RI, SD.UI > 0$

## Hypothesis III

(40 Tests)	(1)	$L_A, GLI.D = 0$ versus $L_A, GLI.D > 0$
	(2)	$L_B, GLI.D = 0$ versus $L_B, GLI.D > 0$
	(3)	$L_{AS}, GLI.D = 0$ versus $GLI, D.L_{AS} > GL, D$
	(4)	$L_{IN}, GLI.D = 0$ versus $GLI, D.L_{IN} < GL, D$
	(5)	$L_A, GLI.SD = 0$ versus $L_A, GLI.SD > 0$
	(6)	$L_B, GLI.SD = 0$ versus $L_B, GLI.SD > 0$
	(7)	$L_{AS}, GLI.SD = 0$ versus $GLI, SD.L_{AS} > GL, SD$
	(8)	$L_{IN}, GLI.SD = 0$ versus $GLI, SD.L_{IN} < GLI, SD$
	(9)	$L_A, LO.D = 0$ versus $L_A, LO.D > 0$
	(10)	$L_B, LO.D = 0$ versus $L_B, LO.D > 0$
	(11)	$L_{AS}, LO.D = 0$ versus $LO, D.L_{AS} > LO, D$
	(12)	$L_{IN}, LO.D = 0$ versus $LO, D.L_{IN} < LO, D$
	(13)	$L_A, LO.SD = 0$ versus $L_A, LO.SD > 0$
	(14)	$L_B, LO.SD = 0$ versus $L_B, LO.SD > 0$
	(15)	$L_{AS}, LO.SD = 0$ versus $LO, SD.L_{AS} > LO, SD$
	(16)	$L_{IN}, LO.SD = 0$ versus $LO, SD.L_{IN} < LO, SD$
	(17)	$L_A, AU.D = 0$ versus $L_A, AU.D > 0$
	(18)	$L_B, AU.D = 0$ versus $L_B, AU.D > 0$
	(19)	$L_{AS}, AU.D = 0$ versus $AU, D.L_{AS} > AU, D$
	(20)	$L_{IN}, AU.D = 0$ versus $AU, D.L_{IN} < AU, D$
	(21)	$L_A, AU.SD = 0$ versus $L_A, AU.SD > 0$
	(22)	$L_B, AU.SD = 0$ versus $L_B, AU.SD > 0$
	(23)	$L_{AS}, AU.SD = 0$ versus $AU, SD.L_{AS} > AU, SD$
	(24)	$L_{IN}, AU.SD = 0$ versus $AU, SD.L_{IN} < AU, SD$



TABLE 7 (CONTINUED)

## Hypothesis III

- (Continued)
- (25)  $L_{A,UI,D}=0$  versus  $L_{A,UI,D}>0$
  - (26)  $L_{B,UI,D}=0$  versus  $L_{B,UI,D}>0$
  - (27)  $L_{AS,UI,D}=0$  versus  $UI,D.L_{AS}>UI,D$
  - (28)  $L_{IN,UI,D}=0$  versus  $UI,D.L_{IN}<UI,D$
  - (29)  $L_{A,UI,SD}=0$  versus  $L_{A,UI,SD}>0$
  - (30)  $L_{B,UI,SD}=0$  versus  $L_{B,UI,SD}>0$
  - (31)  $L_{AS,UI,SD}=0$  versus  $UI,SD.L_{AS}>UI,SD$
  - (32)  $L_{IN,UI,SD}=0$  versus  $UI,SD.L_{IN}<UI,SD$
  - (33)  $LI,GLI,D=0$  versus  $LI,GLI,D>0$
  - (34)  $LI,GLI,SD=0$  versus  $GLI,SD.LI>GL,SD$
  - (35)  $LI,LO,D=0$  versus  $LO,D.LI>LO,D$
  - (36)  $LI,LO,SD=0$  versus  $LO,SD.LI>LO,SD$
  - (37)  $LI,AU,D=0$  versus  $AU,D.LI>AU,D$
  - (38)  $LI,AU,SD=0$  versus  $AU,SD.LI>AU,SD$
  - (39)  $LI,UI,D=0$  versus  $UI,D.LI>UI,D$
  - (40)  $LI,UI,SD=0$  versus  $UI,SD.LI>UI,SD$

## Hypothesis IV

- (4 Tests)
- (1)  $L_{AS,D}$ =positive versus  $L_{AS,D}$ =negative
  - (2)  $L_{AS,SD}$ =positive versus  $L_{AS,SD}$ =negative
  - (3)  $LI,D$ =positive versus  $LI,D$ =negative
  - (4)  $LI,SD$ =positive versus  $LI,SD$ =negative

## Hypothesis V

- (20 Tests)
- (1)  $L_{AS,L_A}$ =positive versus  $L_{AS,L_A}$ =negative
  - (2)  $L_{AS,L_B}$ =positive versus  $L_{AS,L_B}$ =negative
  - (3)  $L_{A,GLI.L_{AS}} \leq L_{A,GLI}$  versus  $L_{A,GLI.L_{AS}} > L_{A,GLI}$
  - (4)  $L_{B,GLI.L_{AS}} \leq L_{B,GLI}$  versus  $L_{B,GLI.L_{AS}} > L_{B,GLI}$
  - (5)  $L_{A,LO.L_{AS}} \leq L_{A,LO}$  versus  $L_{A,LO.L_{AS}} > L_{A,LO}$
  - (6)  $L_{B,LO.L_{AS}} \leq L_{B,LO}$  versus  $L_{B,LO.L_{AS}} > L_{B,LO}$
  - (7)  $L_{A,AU.L_{AS}} \leq L_{A,AU}$  versus  $L_{A,AU.L_{AS}} > L_{A,AU}$
  - (8)  $L_{B,AU.L_{AS}} \leq L_{B,AU}$  versus  $L_{B,AU.L_{AS}} > L_{B,AU}$
  - (9)  $L_{A,UI.L_{AS}} \leq L_{A,UI}$  versus  $L_{A,UI.L_{AS}} > L_{A,UI}$

TABLE 7 (CONTINUED)

## Hypothesis V

- (Continued)
- (10)  $L_{B,UI}.L_{AS} \leq L_{B,UI}$  versus  $L_{B,UI}.L_{AS} > L_{B,UI}$
  - (11)  $LI, L_A = \text{positive}$  versus  $LI, L_A = \text{negative}$
  - (12)  $LI, L_B = \text{positive}$  versus  $LI, L_B = \text{negative}$
  - (13)  $L_{A,GLI}.LI \leq L_{A,GLI}$  versus  $L_{A,GLI}.LI > L_{A,GLI}$
  - (14)  $L_{B,GLI}.LI \leq L_{B,GLI}$  versus  $L_{B,GLI}.LI > L_{B,GLI}$
  - (15)  $L_{A,LO}.LI \leq L_{A,LO}$  versus  $L_{A,LO}.LI > L_{A,LO}$
  - (16)  $L_{B,LO}.LI \leq L_{B,LO}$  versus  $L_{B,LO}.LI > L_{B,LO}$
  - (17)  $L_{A,AU}.LI \leq L_{A,AU}$  versus  $L_{A,AU}.LI > L_{A,AU}$
  - (18)  $L_{B,AU}.LI \leq L_{B,AU}$  versus  $L_{B,AU}.LI > L_{B,AU}$
  - (19)  $L_{A,UI}.LI \leq L_{A,UI}$  versus  $L_{A,UI}.LI > L_{A,UI}$
  - (20)  $L_{B,UI}.LI \leq L_{B,UI}$  versus  $L_{B,UI}.LI > L_{B,UI}$

## Hypothesis VI

- (10 Tests)
- (1)  $L_{IN}.L_{AS} = \text{positive}$  versus  $L_{IN}.L_{AS} = \text{negative}$
  - (2)  $L_{IN,GLI}.L_{AS} \leq L_{IN,GLI}$  versus  $L_{IN,GLI}.L_{AS} > L_{IN,GLI}$
  - (3)  $L_{IN,LO}.L_{AS} \leq L_{IN,LO}$  versus  $L_{IN,LO}.L_{AS} > L_{IN,LO}$
  - (4)  $L_{IN,SU}.L_{AS} \leq L_{IN,AU}$  versus  $L_{IN,AU}.L_{AS} > L_{IN,AU}$
  - (5)  $L_{IN,UI}.L_{AS} \leq L_{IN,UI}$  versus  $L_{IN,UI}.L_{AS} > L_{IN,UI}$
  - (6)  $L_{IN,LI} = \text{positive}$  versus  $L_{IN,LI} = \text{negative}$
  - (7)  $L_{IN,GLI}.LI \leq L_{IN,GLI}$  versus  $L_{IN,GLI}.LI > L_{IN,GLI}$
  - (8)  $L_{IN,LO}.LI \leq L_{IN,LO}$  versus  $L_{IN,LO}.LI > L_{IN,LO}$
  - (9)  $L_{IN,AU}.LI \leq L_{IN,AU}$  versus  $L_{IN,AU}.LI > L_{IN,AU}$
  - (10)  $L_{IN,UI}.LI \leq L_{IN,UI}$  versus  $L_{IN,UI}.LI > L_{IN,UI}$

## Hypothesis VII

- (10 Tests)
- (1)  $MS, L_{AS} = \text{positive}$  versus  $MS, L_{AS} = \text{positive}$
  - (2)  $TX, L_{AS} = \text{positive}$  versus  $TX, L_{AS} = \text{positive}$
  - (3)  $MS, L_A = \text{positive}$  versus  $MS, L_A = \text{negative}$
  - (4)  $MS, L_B = \text{positive}$  versus  $MS, L_B = \text{negative}$
  - (5)  $TX, L_A = \text{positive}$  versus  $TX, L_A = \text{negative}$
  - (6)  $TX, L_B = \text{positive}$  versus  $TX, L_B = \text{negative}$
  - (7)  $MS, L_{IN} = \text{positive}$  versus  $MS, L_{IN} = \text{negative}$
  - (8)  $TX, L_{IN} = \text{positive}$  versus  $TX, L_{IN} = \text{negative}$

TABLE 7 (CONTINUED)

## Hypothesis VII

- |             |      |                                      |
|-------------|------|--------------------------------------|
| (Continued) | (9)  | MS,LI=positive versus MS,LI=positive |
|             | (10) | TX,LI=positive versus TX,LI=positive |

## Hypothesis VIII

- |            |      |  |
|------------|------|--|
| (14 Tests) | (1)  | SE,UEI=positive versus SE,UEI=negative                         |
|            | (2)  | SE,RI=positive versus SE,RI=negative                           |
|            | (3)  | SE,UEI>GLI,UEI versus SE,UEI<GLI,UEI                           |
|            | (4)  | SE,RI>GLI,RI versus SE,RI<GLI,RI                               |
|            | (5)  | SE,UEI>LO,UEI versus SE,UEI<LO,UEI                             |
|            | (6)  | SE,RI>LO,RI versus SE,RI<LO,RI                                 |
|            | (7)  | SE,UEI>AU,UEI versus SE,UEI<AU,UEI                             |
|            | (8)  | SE,RI>AU,RI versus SE,RI<AU,RI                                 |
|            | (9)  | SE,UEI>UI,UEI versus SE,UEI<UI,UEI                             |
|            | (10) | SE,RI>UI,RI versus SE,RI<UI,RI                                 |
|            | (11) | SE,UEI>CL <sub>A</sub> ,UEI versus SE,UEI<CL <sub>A</sub> ,UEI |
|            | (12) | SE,UEI>CL <sub>B</sub> ,UEI versus SE,UEI<CL <sub>B</sub> ,UEI |
|            | (13) | SE,RI>CL <sub>A</sub> ,RI versus SE,RI<CL <sub>B</sub> ,RI     |
|            | (14) | SE,RI>CL <sub>B</sub> ,RI versus SE,RI<CL <sub>B</sub> ,RI     |
- 
-

The results, shown in Table 8, indicated a quite mixed pattern. Four of the tests supported the Collaborative model; three supported the Traditional model; and one supported both models. Taken collectively, they indicate the following:

- . There is variance shared between obedience (measured by a four-item index of willingness to deploy) and reenlistment intention, over and above that stemming from group loyalty.
- . There is variance shared between obedience and unit effectiveness, over and above that stemming from group loyalty.
- . There is variance shared between group loyalty and either unit effectiveness or reenlistment intention, over and above that shared with obedience.

On this hypothesis, therefore, the results suggest that neither the Traditional nor the Collaborative models is strictly correct. While they may share some impactful effect, both group loyalty and obedience are independently related to effectiveness.

#### Results for Hypothesis II

The second hypothesis is similar to the first, but deals with the effect and role of discipline, instead of obedience. The Traditional model holds that discipline is instrumental to any connection between group loyalty and effectiveness, whereas the Collaborative model sees both effectiveness and discipline as coordinate outcomes of group loyalty.

Since, in this instance, there were two measures of discipline instead of one -- the Discipline Index and a separate single-item measures, there were 16 tests instead of eight. Again from Table 8, it is apparent that the Collaborative model was largely substantiated. Twelve of the tests upheld that view, whereas two tests sustained neither model. Only two substantiated the Traditional model, and these, like those supporting neither model, were concerned with one measure of group loyalty -- Army/Unit Reference Group (AU) -- which may be a more remote or peculiar indicator.

The conclusion with regard to this hypothesis, therefore, is that discipline and effectiveness are coordinate outcomes of cohesive groups, as the Collaborative model would suggest.

TABLE 8

## RESULTS OF HYPOTHESIS TESTS

Hypothesis I	Test	Result	Model Supported
	(1a)	.36	
	(1b)	.30	Collaborative
	*(2a)	-.10	
	*(2b)	-.27	Traditional
	(3a)	.48	
	(3b)	.28	Collaborative
	*(4a)	-.41	
	*(4b)	-.12	Collaborative
	(5a)	.10	
	(5b)	.06	Collaborative
	*(6a)	-.06	
	*(6b)	-.29	Traditional
	(7a)	.32	
	(7b)	.29	Both
	*(8a)	-.16	
	*(8b)	-.25	Traditional
Hypothesis II	(1a)	.11	
	(1b)	.38	Collaborative
	*(2a)	-.06	
	*(2b)	-.14	Collaborative
	(3a)	.23	
	(3b)	.35	Collaborative
	*(4a)	-.04	
	*(4b)	-.14	Collaborative
	(5a)	.13	
	(5b)	.54	Collaborative
	*(6a)	-.02	
	*(6b)	-.47	Collaborative
	(7a)	.23	
	(7b)	.52	Collaborative
	*(8a)	.03	
	*(8b)	-.48	Collaborative

TABLE 8 (CONTINUED)

Hypothesis II (Continued)	Test	Result	Model Supported
	(9a)	.19	
	(9b)	.13	Traditional
	*(10a)	-.09	
	*(10b)	-.08	Neither
	(11a)	.31	
	(11b)	.12	Traditional
	*(12a)	-.08	
	*(12b)	-.08	Neither
	(13a)	.14	
	(13b)	.35	Collaborative
	*(14a)	-.06	
	*(14b)	-.21	Collaborative
	(15a)	.24	
	(15b)	.32	Collaborative
	*(16a)	-.03	
	*(16b)	-.21	Collaborative
Hypothesis III	(1)	.38	Collaborative
	*(2)	-.21	Collaborative
	(3)	.08; .25 > .08	Collaborative
	(4)	.30; .21 < .25	Collaborative
	(5)	.36	Collaborative
	*(6)	-.21	Collaborative
	(7)	.03; .27 > .18	Both
	(8)	.28; .20 < .28	Collaborative
	(9)	.55	Collaborative
	*(10)	-.44	Collaborative
	(11)	.02; .01 < .16	Traditional
	(12)	.40; .10 < .16	Collaborative
	(13)	.53	Collaborative
	*(14)	-.43	Collaborative
	(15)	-.02; .24 = .24	Traditional
	(16)	.37; .14 < .24	Collaborative
	(17)	.11	Traditional
	*(18)	-.06	Traditional

TABLE 8 (CONTINUED)

Hypothesis III (Continued)	Test	Result	Model Supported
	(19)	.03;.06=.06	Traditional
	(20)	.11;.04<.06	Collaborative
	(21)	.10	Traditional
	*(22)	-.05	Traditional
	(23)	.02	Traditional
	(24)	.10;.04<.07	Collaborative
	(25)	.24	Collaborative
	*(26)	-.19	Collaborative
	(27)	.09;.18=.18	Traditional
	(28)	.42;.12<.18	Collaborative
	(29)	.21	Collaborative
	*(30)	-.18	Collaborative
	(31)	.04;.26<.27	Traditional
	(32)	.39;.17<.27	Collaborative
	(33)	.31	Collaborative
	(34)	.27;.17<.28	Both
	(35)	.35;.10<.16	Both
	(36)	.31;.11<.24	Both
	(37)	.09;.04<.06	Traditional
	(38)	.08;.03<.07	Traditional
	(39)	.36;.12<.18	Both
	(40)	.32;.14<.27	Both
Hypothesis IV	(1)	.01	Neither
	(2)	.04	Neither
	(3)	.20	Traditional
	(4)	.38	Traditional

TABLE 8 (CONTINUED)

Hypothesis V	Test	Result	Model Supported
	(1)	.02	Neither
	*(2)	.08	Traditional
	(3)	.40;.40	Traditional
	*(4)	-.24;-.23	Traditional
	(5)	.56;.56	Traditional
	*(6)	-.45;-.45	Traditional
	(7)	.12;.12	Traditional
	*(8)	-.06;-.06	Traditional
	(9)	.26;.26	Traditional
	*(10)	.11;-.21	Traditional
	(11)	.38	Traditional
	*(12)	-.29	Traditional
	(13)	.31<.40	Traditional
	*(14)	-.15<-.23	Traditional
	(15)	.49<.56	Traditional
	*(16)	-.38<.45	Traditional
	(17)	.08<.12	Traditional
	*(18)	-.03<-.06	Traditional
	(19)	.13<.26	Traditional
	*(20)	-.11<-.21	Traditional
Hypothesis VI	(1)	.10	Traditional
	(2)	.33;.33	Traditional
	(3)	.41;.41	Traditional
	(4)	.12;.12	Traditional
	(5)	.44;.44	Traditional
	(6)	.48	Traditional
	(7)	.20<.33	Traditional
	(8)	.29<.41	Traditional
	(9)	.08<.12	Traditional
	(10)	.32<.44	Traditional



TABLE 8 (CONTINUED)

Hypothesis VII	Test	Result	Model Supported
	(1)	.07	Neither
	(2)	.10	Both
	(3)	.45	Traditional
	* (4)	-.34	Traditional
	(5)	.29	Traditional
	* (6)	-.17	Traditional
	(7)	.43	Traditional
	(8)	.22	Traditional
	(9)	.43	Both
	(10)	.10	Both
Hypothesis VIII	(1)	.34	Traditional
	(2)	-.08	Neither
	(3)	.34; .41	Collaborative
	* (4)	-.08; -.16	Collaborative
	(5)	.34; .56	Collaborative
	* (6)	-.08; -.48	Collaborative
	(7)	.34; .14	Traditional
	* (8)	-.08; -.09	Neither
	(9)	.34; .38	Collaborative
	* (10)	-.08; -.23	Collaborative
	(11)	.34; .59	Collaborative
	(12)	.34; -.18	Traditional
	(13)	-.08; -.34	Collaborative
	(14)	-.08; -.12	Collaborative

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\*One measure contains a reverse scale and relationships are therefore expected to be negative.

### Results for Hypothesis III

This hypothesis concerns the role, if any, played by discipline in the connection between leadership and group loyalty. The Traditional model holds that discipline is instrumental to the connection between leadership and group loyalty, whereas the Collaborative model holds that it is not.

In this instance, there were five measures of leadership: Leadership Index A ( $L_A$ ), Leadership Index B ( $L_B$ ), Incremental Influence Index ( $L_{IN}$ ), Ascribed Influence Index ( $L_{AS}$ ), and Legitimate Influence ( $L_I$ ). The first of these, Leadership Index A, is primarily concerned with supervisory behavior of an interpersonally supportive and motivating kind, whereas the second, Leadership Index B, is more concerned with teamwork facilitative behavior -- behavior which initiates structure. The remaining measures concerned the influence base which the supervisor employs, whether it was incremental (based upon referent and expert forms of influence), ascribed (based upon the use of reward and/or punishment), or legitimate (based upon respect for authority). Since there were as before, four measures of group loyalty and two measures of discipline, there were 40 separate tests of this hypothesis.

Once more the results are presented in Table 8. They show that the Collaborative model was largely confirmed. Twenty-two of the 40 tests sustained that model, whereas 12 supported the Traditional, and two supported both models. An examination of the tests which supported the Traditional model show, in this instance as before, that many of them (eight of the 12) were concerned with the more questionable index of group loyalty, Army/Unit Reference Group. The remaining four were all concerned with ascribed influence. As the Traditional model suggests, partialling discipline out of the relationship between ascribed influence and group loyalty produced a coefficient that was, for all intents and purposes, zero. Contrary to what the Collaborative model suggests, removing ascribed influence from the relationship between leadership and group loyalty did not enhance that relationship. It would appear, therefore, that ascribed influence has little impact, either positive or negative. Although this is contrary to the assumptions made by both models, it would appear to be a more serious problem for the Traditional view.

The findings for those tests which in part supported both models are equally interesting. They indicated that, while discipline was not an instrumental factor between the exercise of legitimate influence and group loyalty, group loyalty was not incompatible with the exercise of such influence. In this instance, the difficulty would appear to be greater for a Collaborative model strictly stated.

The conclusions concerning this hypothesis are that (a) leadership leads directly to group loyalty, as the Collaborative model suggests, not through discipline, (b) reliance upon ability to reward and punish has little or no usefulness in relation to group loyalty, and (c) respect for authority is not incompatible with the leadership and group loyalty components of the Collaborative model.

#### Results for Hypothesis IV

This hypothesis is concerned once more with ascribed and legitimate supervisory influence bases, in this case their relationship to discipline. The Traditional model suggests that exercising influence of these kinds leads to discipline, whereas the Collaborative model suggests that it detracts from discipline.

In this instance, two measures of influence and two measures of discipline were involved, for a total of four tests. As the data in Table 8 indicate, two of the tests confirmed the Traditional model, while two confirmed neither that nor a Collaborative model.

Consistent with the Traditional model, and contrary to the prediction of a Collaborative model, the exercise of legitimate influence (i.e., the use of respect for authority) contributed to discipline. However, ascribed influence of a reward and punishment kind had little or no relationship to discipline. It neither enhanced that discipline, as the Traditional model would suggest, nor did it detract.

### Results for Hypothesis V

This hypothesis concerns the relationship between ascribed or legitimate influence and other aspects of leadership in their effect upon group loyalty. Perhaps the stronger statement comes from the Collaborative model, which holds that exercising influence from these bases will be detrimental to leadership's building of group loyalty. The Traditional model, on the other hand, predicts that no such incompatibility will occur.

Results from 20 tests of this hypothesis are presented in Table 8. All but one confirmed the Traditional model's position. The remaining test supported neither position. Closer examination suggests that these results are not inconsistent with those obtained in tests of hypotheses III and IV. Since ascribed influence of a reward and punishment kind had little impact at all upon group loyalty, removing it did not affect the connection between leadership and that loyalty.

Similarly, the use of legitimate influence was consistent both with leadership of other forms and with the building of group loyalty. Contrary to the Collaborative model's prediction, therefore, removing it from the connection between those other two characteristics damaged that connection.

### Results for Hypothesis VI

The sixth hypothesis concerns the relationship between the use of incremental influence on the one hand and the use of ascribed or legitimate influence on the other. The Traditional model holds that the relationship will be positive, such that controlling for it will reduce the relationship between incremental influence and group loyalty. The Collaborative model, by contrast, holds that the relationship between these influence forms will be negative and that controlling for its effect will increase the relationship between incremental influence and group loyalty.

From Table 8, it can be seen that all 10 tests confirmed the Traditional model. The relationship between ascribed influence of a reward and punishment kind and incremental influence was not negative, although it was also not strongly positive. Since, as we have seen earlier, ascribed influence had little effect at all, removing it did not affect the relationship of incremental influence to group loyalty.

The relationship of legitimate to incremental influence was strongly positive, on the other hand. Removing it did substantially affect the relationship of incremental influence to group loyalty.

#### Results for Hypothesis VII

This hypothesis is concerned with the connection between a hierarchical orientation and effective leadership. The Traditional model assumes a positive relationship, whereas the Collaborative model assumes that the relationship will be negative.

Two measures of hierarchical orientation were employed: a Military Sentiment Index (MS) which measured faith in the Army as an institution and in its top leaders, and a Theory X Index (TX) which measured endorsement of more directive practices.

Five measures of leadership were employed, yielding 10 tests of the hypothesis. As the results in Table 8 indicate, six of the tests sustained the Traditional viewpoint; three tests sustained both the Traditional and Collaborative positions; and one test sustained neither view.

The six tests confirming the Traditional model concerned the relationship between the two measures of hierarchical orientation and three leadership measures: Leadership Index A, Leadership Index B, and Incremental Influence. In all of these instances, high scores on Military Sentiment and Theory X were consistent with perceptions of effective leadership.

One of the tests confirming both models did so because the prediction of both models is the same, namely that a high score on Military Sentiment will be consistent with the use of legitimate influence. In the test, this was found to be true.

Another test confirming both models was similar, that a high score on Theory X would be consistent with the use of ascribed influence of a reward and punishment kind. While the relationship was small in size, the data indicated that it was positive.

The third test confirming both supported a positive connection between Theory X and the use of legitimate influence, once more a connection hypothesized by both models.

The test confirming neither model concerned a hypothesized positive connection between Military Sentiment and the use of ascribed influence. While the relationship was positive, it was too low to be taken as a clear indicator of support.

The conclusion, therefore, is that, contrary to the prediction of the Collaborative model, a hierarchical orientation is not inconsistent with effective leadership practices and experiences.

#### Results for Hypothesis VIII

This hypothesis concerns the type of organizational climate most conducive to unit effectiveness. The Traditional model stresses the importance of clear and enforced standards and holds that an organizational climate which does so will contribute more to unit effectiveness than one which emphasizes collaborative interpersonal processes. The Collaborative model, of course, hypothesizes the reverse.

The results, contained in Table 8, on the whole supported the Collaborative position. Of the 14 tests, nine confirmed that view, whereas three supported a Traditional model. Two tests confirmed neither position.

In more descriptive terms, having clearly enforced standards was consistent with effectiveness as measured by the Unit Effectiveness Index (UEI), but it had little impact one way or another upon Reenlistment Intention (RI). Beyond this, there would appear to be a stronger relationship between a collaborative organizational climate and group loyalty on the one hand and effectiveness (however measured) on the other, than between enforcement of standards and effectiveness.

#### Summary of Results for Correlational Tests

The results of the 122 correlational tests of various aspects of the eight major hypotheses suggested that neither the Traditional model nor the Collaborative model are completely accurate when applied to Army settings. Instead, portions of each appear to have been verified.

The Traditional model's propositions that obedience is important to unit effectiveness, that respect for authority is an important influence base for supervisory leadership, and that having clear and enforced standards is important for unit effectiveness were essentially verified. On the other hand, obedience did not appear to be an essential mediator between group loyalty and unit effectiveness. Instead, group loyalty appeared to have its own substantial impact upon effectiveness.

Other aspects of the Traditional model also appear to have been disconfirmed. Discipline was found to come from group loyalty, which in turn came from leadership, rather than a sequence in which discipline came from leadership and led to group loyalty.

Similarly, reliance upon reward and punishment was found, perhaps surprisingly, to have little or no effect upon either group loyalty or discipline.

Finally, the existence of a collaborative climate and of group loyalty was found to have a stronger positive impact upon both unit effectiveness and reenlistment intention than did the existence of clearly enforced standards.

The results might therefore point toward an integrated model in which hierarchical orientation, clear standards, and respect for authority combine with a collaborative climate and practices to produce group loyalty and, both directly and through the latter, unit effectiveness. In the next portion of this section, an integrated model of this type will be tested.

### 5.3 Structural Equation Tests of Traditional, Collaborative and Integrated Models

The second part of the model testing section of this report involved estimating a series of structural equation models. These models were initially estimated on wave three, individual level data and then extended to wave 4. Since there were no actual performance data available at the individual level, this first series of models relied on a surrogate performance measure made up of unit effectiveness ratings (the UEI index) and re-enlistment intentions (RI).

The first pair of models estimated were direct approximations of the Traditional and Collaborative models as described earlier in this report. The Traditional model is presented in Figure 4.

First, a note on interpretation: the rectangles in this diagram represent the indexes and items, described earlier, and the circles represent the general factors into which they cluster. The lines linking the rectangles to the circles indicate the factor loadings of each measure on the general factor. The arrows between the circles represent the relations between the clusters. These are of two types: betas -- indicated by the straight, single-headed arrows, and correlations -- indicated by the curved, double-head arrows. Finally, the number in parentheses inside the circle is the amount of unexplained variance in that factor.

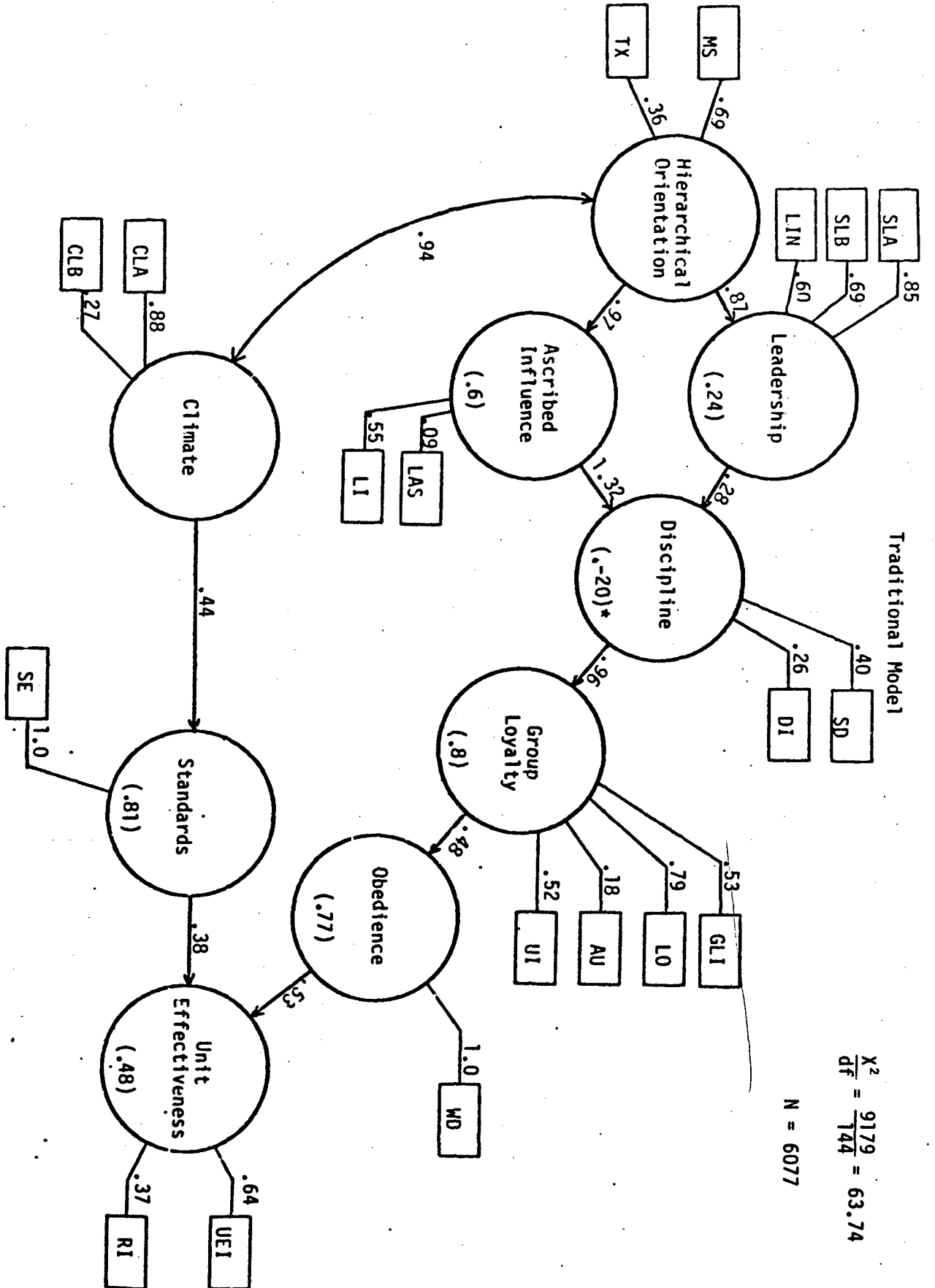
A number of points are evident from this model. First, the measure of fit (chi-square/degrees of freedom) for this model is very poor. It is much higher, as will be subsequently seen, than the remaining models.\* Second, this model explains about half of the variation in unit effectiveness and furthermore shows that discipline alone explains about one-quarter ( $.53^2$ ) of the variation in unit effectiveness.

Several of the measures in this model appear to be relatively unrelated to the rest. Ascribed influence (LAS), for example, is only slightly

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\*Joreskog (1974) has warned that with large sample sizes such as exist in the present instance, no model may fit the data. Thus, he suggests that research rely on the relative fit of different models. This is the strategy which is employed in the present study.





\*See Footnote #1.

Figure 4

related to the general cluster\*, as is the Army Las-a-reference-unit measure (AU). This indicates that these measures are generally poor predictors of the outcomes considered here.

In general, the residuals from this analysis indicate that the Traditional model does not account for the substantial effect which leadership, incremental influence, respect for authority, loyalty to the group and to the organization, and the personal influence of the unit commander have on unit effectiveness. Military sentiment and participative climate (CLA) are also much more strongly related to unit effectiveness than the Traditional model allows for.

The Collaborative model is presented in Figure 5. The most important difference between this model and the Traditional model is that the Collaborative model views discipline, standards, obedience and effectiveness as concurrent outcomes, all of which are closely related to group loyalty. Ascribed influence has a direct effect on discipline, and hierarchical orientation has a direct effect on unit effectiveness, but leadership and incremental influence are seen as a result of the general climate, which acts on the outcome variables through the medium of group loyalty. The fit of this model is a substantial improvement over the Traditional model, but some of the estimates are difficult to interpret and indicate that this model is also a less than satisfactory representation of the original data.

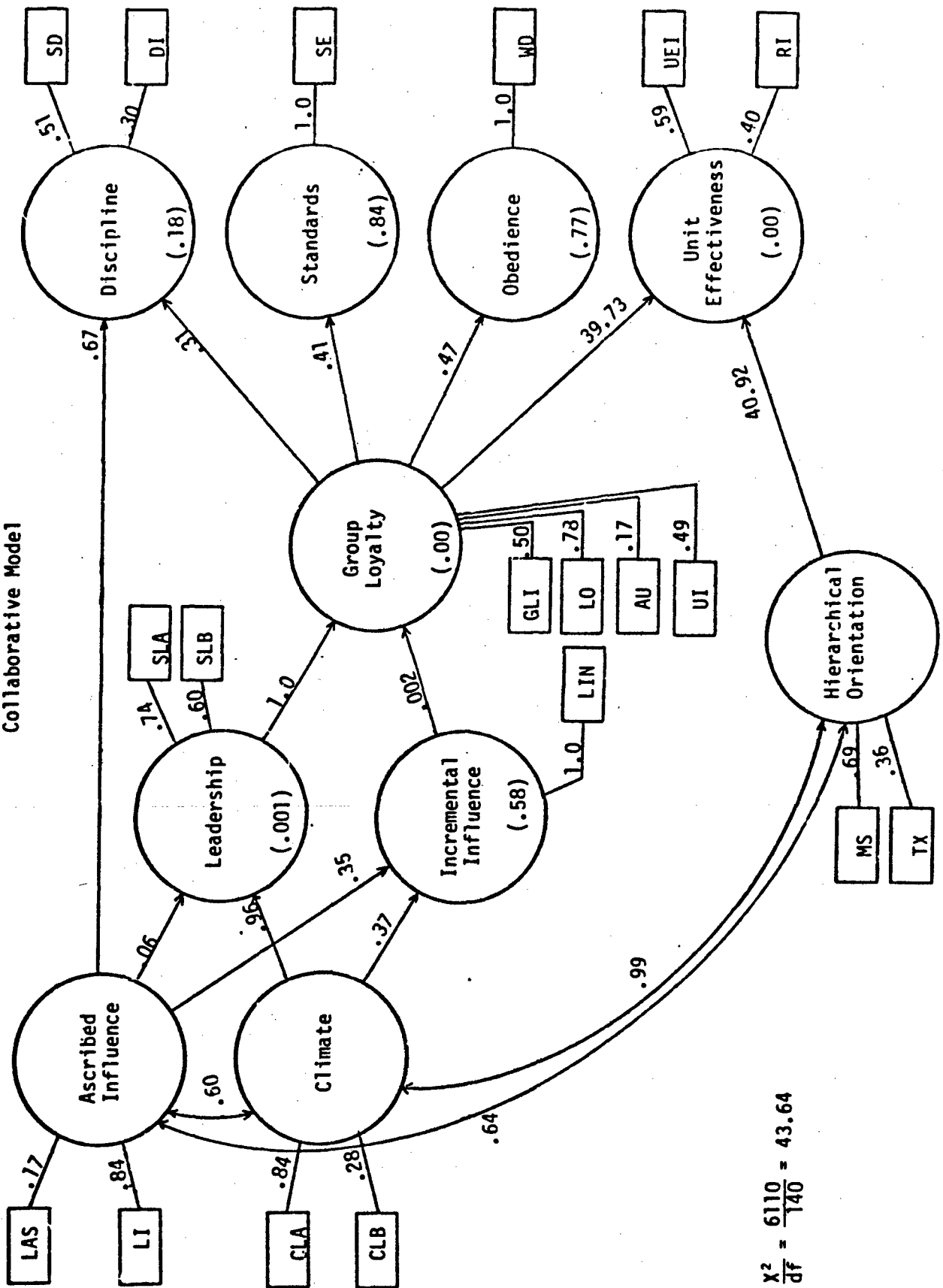
These estimates do, however, show the strong effect which organizational climate has on leadership and the strong effect which leadership has on group loyalty. The apparent lack of a relationship and between incremental influence and group loyalty, seems to be a statistical artifact, rather than an accurate description, as does the over-inflated estimate of the two predictors of unit effectiveness. This appears to stem once again from a wide discrepancy in the factor loadings on the measures involved. Despite these problems, it can be clearly seen that both group loyalty and hierarchical orientation have a direct influence on unit effectiveness.

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\*Besides indicating that LAS has little predictive power, this situation creates a statistical problem. The LISREL algorithm, in this situation, tends to continue iterating until it arrives at an artificially large beta coefficient. Although this occasionally generates some awkward estimates, the measuring in this case is clear: legitimate influence (LI) is a fairly good predictor of discipline while ascribed influence is fairly irrelevant.

Figure 5

## Collaborative Model



It is worth noting that ascribed influence (LAS) and Army-as-a-reference-group (AU) appear to have a marginal impact in this model as well as in the Traditional model. Legitimate influence (LI), appears to have a substantial impact on discipline, however.

The residuals for this model are generally much lower than for the Traditional model. However, they do indicate that the Collaborative model as phrased here does not take into account the direct effect which ascribed influence and leadership have on standards. Secondly, the group loyalty index itself is more closely related to both discipline and standards than the model allows for by grouping it with the other components of that cluster. Finally, viewing discipline, standards, obedience and unit effectiveness as concurrent outcomes primarily influenced by group loyalty, appears to underestimate the strength of the relationships between standards and unit effectiveness.

#### The Revised Model

Neither of the two theoretically-based models summarized above provided an adequate representation of the data. More extensive multi-dimensional scaling suggested that several of the clusters should be changed.\*

1. The standards of discipline item (SD) should be in the same cluster as standards enforcement (SE).
2. Military sentiment (MS) -- a measure of trusting and believing in leaders, is closely related to other measures of collaboration.
3. SLA and SLB, and CLA and CLB separate, not on climate or leadership but rather on support, participation and collaboration (SLA & CLA) versus structure, organization, coordination and bureaucracy (SLB & CLB). For this reason, SLA and CLA became part of the collaboration cluster, while SLB and CLB became part of the structure cluster.
4. AU, LAS, and LI were closest to TX, the one measure remaining in the hierarchical orientation cluster. These four were grouped into one cluster despite the fact that AU and LAS were only weakly related.
5. The two measures of unit effectiveness, re-enlistment intention (RI) and UEI were separated.

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\*This stage of the analysis relied on smallest-space analysis (MINISSA) (Guttman, 1968; Lingoes, 1973) procrustean individual differences scaling (PINDIS) Lingoes & Borg, 1976), which was used to compare data structure across waves and then approximate a general data structure for the two waves.

It also seemed clear at this stage of multi-dimensional scaling that discipline, standards, obedience and unit effectiveness were all concurrent outcomes,\* most closely related to group loyalty and other measures of collaboration.

With these changes in mind, a number of alternative models were estimated. The most suitable model, both in terms of fit and interpretability is presented below in Figure 6.

This revised model fitted the data better than either the Traditional or the Collaborative model. It was also simpler and easier to interpret. This model implies that collaboration is a result of the individual's hierarchical orientation and the organizational structure within which persons work and live. Collaboration was the best predictor of the outcome variables and accounted for most of the variation which the outcomes shared with the hierarchical orientation and structure clusters. If, for example, discipline and hierarchical orientation had had a lot in common with each other which was not also common to collaboration, then this model would have fitted poorly.

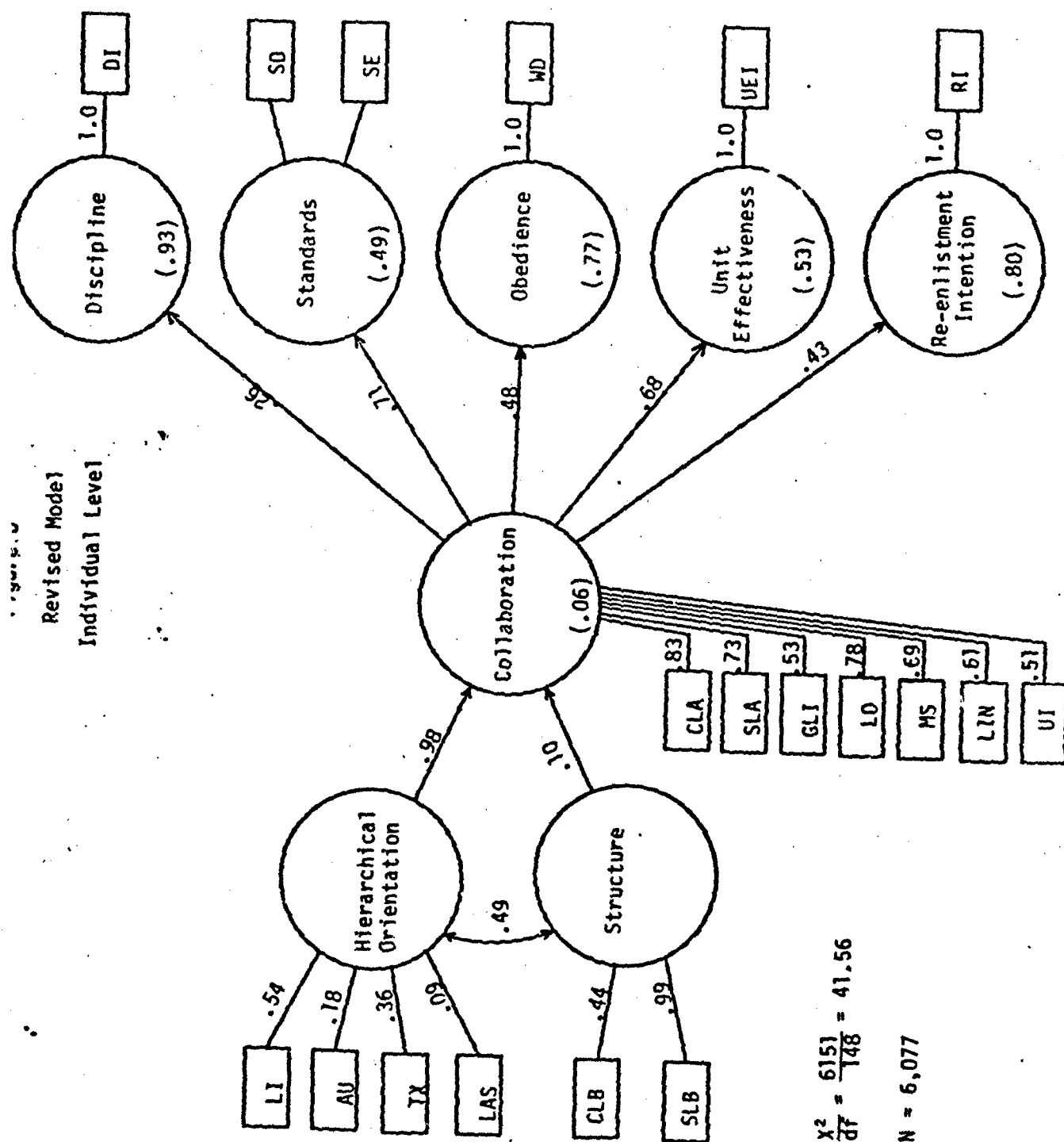
It is apparent from the model that collaboration was a good predictor of both standards and unit effectiveness, and a slightly less effective predictor of obedience and re-enlistment intentions. It was also a moderately good predictor of discipline. Hierarchical orientation appeared to provide a basis for collaboration, while work organization and structure also influenced collaboration.

The residuals for this model were generally very small. One pattern, however, does emerge. Respect for authority and ascribed influence had a more direct relation to the maintenance of standards than the model would have suggested. Group loyalty also appeared to have a more direct relationship to both standards enforcement and discipline than this model allowed for.

A separate series of models estimated the direct effect of hierarchical orientation, collaboration and structure, both separately and in combination, on this same set of outcome variables. The results are not presented here, but can be briefly summarized and add to the understanding of the series of relationships included in Figure 6. Hierarchical orientation had its

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\*Several exceptions to this point are noted later in this section.



greatest effect on discipline and standards, very little effect on obedience and small influence on unit effectiveness. Structure's greatest impact seemed to be on unit effectiveness, while collaboration had its strongest impact on obedience and unit effectiveness.

#### Company Level Analyses

The analyses up to this point were conducted with data from individuals. The remaining tests were conducted using company level data. Several additional measures were available at the company level. Included were ratings and rankings by the company commander. These measures were also included in a form weighted by the ratings and rankings of the Battalion commanders, ADC's, and Commanding Generals. Actual record data from the battalion level were also imputed to their constituent companies.

The first model in this series was the same as the revised model presented earlier in Figure 6, but estimated using company data. This model is presented in Figure 7.

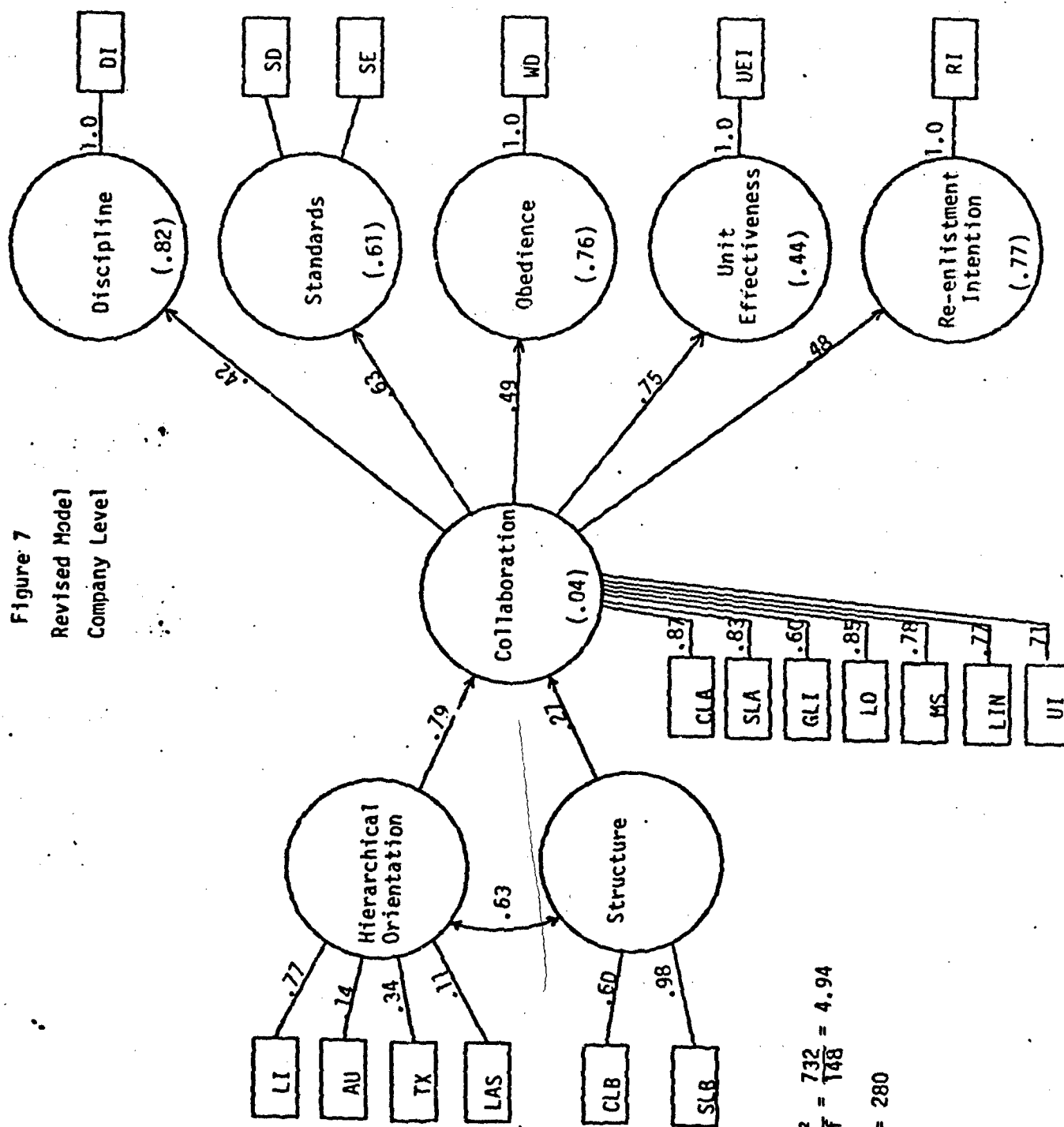
This model presented a picture similar to the individual level model. One important difference should be noted. The effect of work organization and structure was much greater at the company level than it had been at the individual level. The effect of hierarchical orientation was also substantially higher. The implication is clear that work organization and structure have a greater impact on collaboration at the company level.

The residuals for this model indicated a reasonable fit. Relationships which the model did not fully account for include the effect of group loyalty on standards and the effect of standards on unit effectiveness. One other point emerges from the residuals: re-enlistment intentions were more closely related to the Army-as-a-reference-group (AU) index and to ascribed influence than the model allowed for.

Several other differences between this model and the individual level model are not readily apparent, but are worth noting: even though the collaboration cluster was still the best predictor of outcomes, different components of that cluster accounted for that relationship at the company level. Most importantly, military sentiment and loyalty to the organization were much more closely related to unit effectiveness at the company level

Figure 7

Revised Model  
Company Level



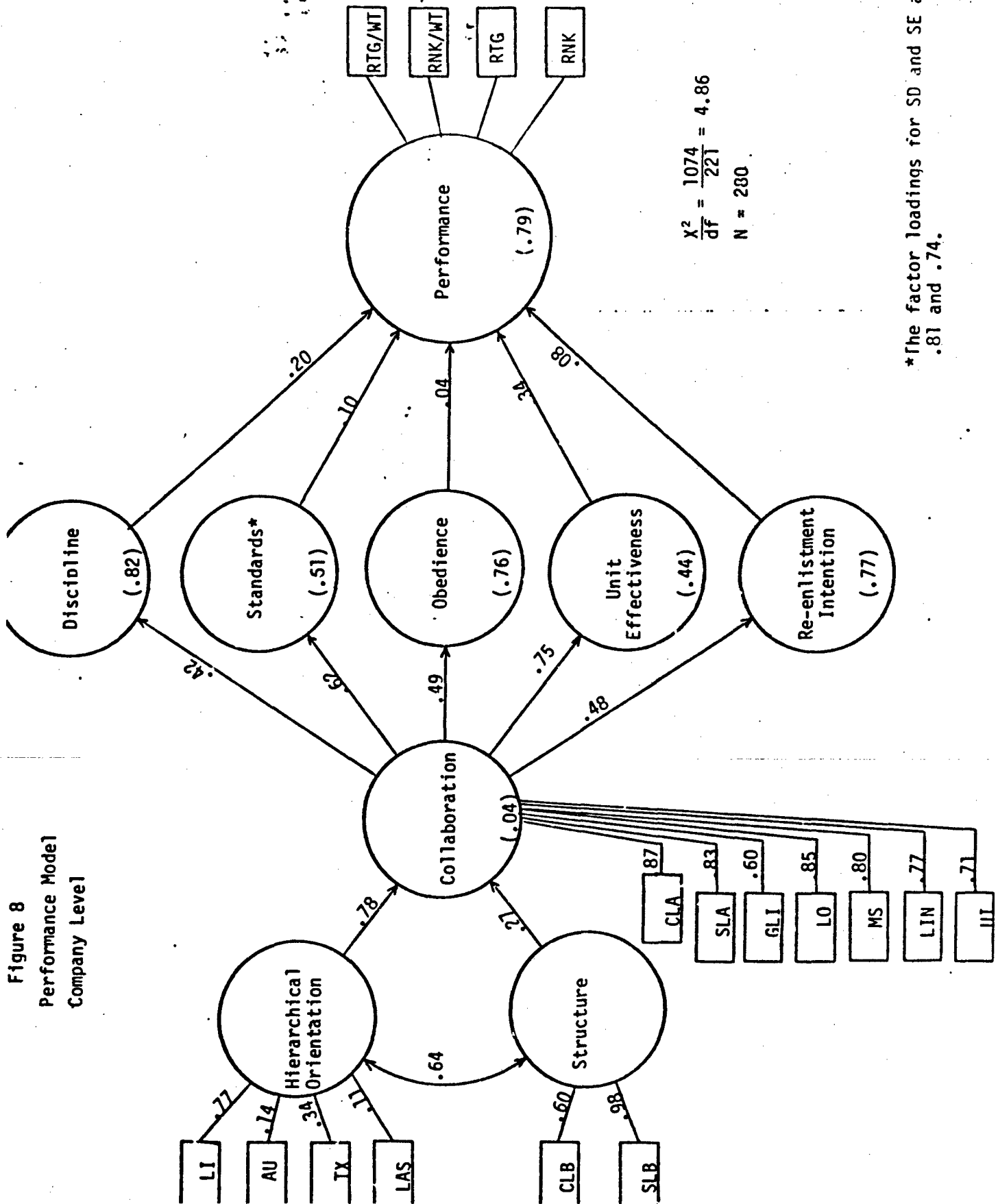


than they had been at the individual level. Group loyalty played a stronger role in unit effectiveness at the individual level than it did at the company level.

Figure 8 presents the extension of this model to include the performance measures described above.

The features of interest in this model are the beta weights for the predictors of performance. Most importantly, unit effectiveness was the best of these predictors, indicating that it was a reasonably good surrogate measure of effectiveness. This also points to some degree of consensus between the questionnaire data and the performance data. Secondly, it is interesting to note the lack of influence which obedience, standards and re-enlistment intentions had on the performance measures.

Figure 8  
Performance Model  
Company Level



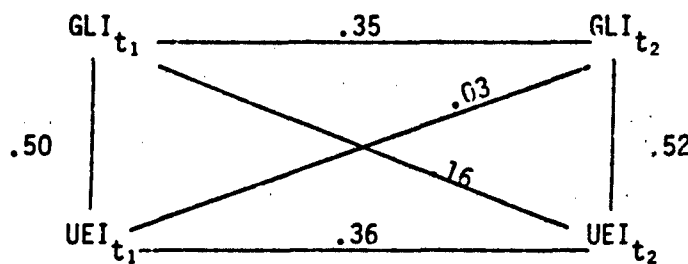
\*The factor loadings for SD and SE are .81 and .74.

#### 5.4 Cross Wave Analyses

This section summarizes a series of cross-lag correlations which compared each of the individual measures of collaboration with the range of outcome variables. These analyses were performed on waves three and four company level data.

Cross-lag analysis (Pelz & Andrews, 1964) is a means of detecting causal, or directional relationships by comparing measures on multiple variables at multiple points in time. Figure 9 illustrates the basic form of these analyses.

Figure 9



The correlation between  $GLI_{t_1}$  and  $UEI_{t_1}$  (.50) represents the within-wave relation between these two measures. The correlation  $GLI_{t_2}$  and  $UEI_{t_2}$  (.52) indicates that this relationship is nearly identical within the two waves.  $GLI_{t_1}$ ,  $GLI_{t_2}$ , and  $UEI_{t_1}$ ,  $UEI_{t_2}$  represents the stability of these measures over time. The cross-lagged correlations,  $GLI_{t_1}$ ,  $UEI_{t_2}$ , and  $UEI_{t_1}$ ,  $GLI_{t_2}$  allow for causal effects to be detected. In this example, it is apparent that group loyalty has an effect on UEI ( $r_{GLI_{t_1}, UEI_{t_2}}$ ) that is stronger than the effect of UEI on group loyalty ( $r_{UEI_{t_1}, GLI_{t_2}}$ ). Thus we can infer that group loyalty has a causal influence on unit effectiveness.

This procedure was followed for all of the collaboration measures, plus respect for authority (LI), in relation to the range of outcome measures. One important factor in evaluating these relationships is the stability of these measures across waves. This information is presented below in Table 9.

TABLE 9

Stability of measures across waves:  
Company level correlations between W03 and W04 measures

<u>Measures</u>	<u><math>r_{t_1 t_2}</math></u>
CLA	.10
SLA	.18
GLI	.35
LO	.14
MS	.01
LIN	.06
UI	.16
LI	.21
DI	.27
SE	.36
WD	.44
UEI	.36
RI	.31
SD	.29

#### Loyalty to the Organization

The relationship between LO and the outcome measures is very similar within the two waves. It is generally most strongly related to willingness to deploy, unit effectiveness and re-enlistment intentions. The stability of the LO measure itself, as is noted in Table , is fairly low.

The cross-lag correlations show that loyalty to the organization has its strongest causal effect on re-enlistment intentions. This and other cross-lag correlations mentioned in this section are presented in Appendix I. The relation of LO to unit effectiveness appears to be two-way, and of fairly substantial magnitude. In other words, LO causes UEI, but UEI also causes LO. Other cross-lags show that standards have a strong causal effect on loyalty, but that loyalty does not necessarily promote standards.

#### Military Sentiment

Military sentiment has the lowest stability across waves of any measure summarized in this section. Its relationship to the outcome measures, however, is fairly constant within each of the waves -- it is consistently related to willingness to deploy, unit effectiveness, standards and re-enlistment intentions.

Military sentiment has its strongest causal effect on willingness to deploy. The other cross-lag effects are consistently small and give little evidence of causality.

#### Climate A

CLA also has a fairly low stability across waves, and constant relations with the outcome measures within waves. Its relation with UEI is strong within waves, but the cross-lag correlations show that this relationship is reciprocal. The strongest directional relationship indicates that standards have a direct effect on CLA. The interpretation of this seems clear: over time, the presence of clear standards contributes to a supportive and participate climate.

#### Supervisory Leadership A

SLA has a moderate stability across waves and consistent relations with the outcome measures (notably UEI) within waves. SLA has a reciprocal relation with UEI and seems to have some causal effect on both re-enlistment intentions and willingness to deploy. As was noted with CLA, standards and discipline have a reciprocal causal effect on SLA.

### Incremental Influence

The LIN measure has very little stability across waves, but constant relationship with the outcome measures within waves. It is strongly related to unit effectiveness within waves, but shows little direct causal effect on any of the outcome measures. There is some evidence here that standards have a slight causal effect on incremental influence.

### Unit Influence (UI)

UI is only moderately stable across waves, but has consistently strong relationships to the outcome measures within waves. The strongest within-wave relationship is with unit effectiveness -- when viewed across waves, this UI-UEI relationship appears to be reciprocal. The strongest causal impact which UI has appears to be on standards enforcement.

### Group Loyalty

The group loyalty index is fairly stable across waves and also has stable relations to the outcome measures within each wave. Its strongest causal impact, as noted in the example in Figure is on unit effectiveness. Re-enlistment intentions and discipline have a substantial effect on group loyalty, while standards and group loyalty have a strong reciprocal relationship.

### Respect for Authority (LI)

LI has fair stability across waves and very stable relations with the outcome measures within waves. This index does not appear to have any strong causal effect on any of the outcome measures, but standards, discipline and willingness to deploy do appear to have a fairly direct causal effect on respect for authority.

The cross-lag analyses presented here are generally consistent with the revised company level model presented above. Comparisons across waves does allow us to expand on that model somewhat.

Some of the most interesting findings in this section concern the effects of standards and discipline on CLA, SLA and loyalty to the organization. CLA and SLA are measures of support and participation which are part of the general collaboration factor. Standards and discipline appear to be causes of these. Standards and discipline, however, do not appear to have a causal effect on unit effectiveness, obedience, or re-enlistment intentions. The best predictors of unit effectiveness and re-enlistment are collaboration factors -- loyalty to the group and to the organization and supportive supervision. Thus, there is consistent evidence that standards and discipline lay the groundwork for successful collaboration and participation, but do not lead directly to unit effectiveness. Collaboration seems to lead more directly to unit effectiveness, but depends upon standards and discipline.

### 5.5 Discussion And Conclusions

The results presented in the preceding section provide both a reasonably clear picture of an appropriate model of Army organizational functioning and some surprising findings. In general, neither a pure Traditional nor a pure Collaborative model is consistently supported. Instead, certain elements of both appear to obtain in Army settings, with the main tenets of an integrated model perhaps closer to those of the Collaborative approach than to those of the Traditional. It remains to the present discussion to interpret the meaning of these findings.

The exercise of legitimate authority and the presence of respect for it are positive factors in an Army setting, not negative ones -- positive both in terms of some general contribution to the system's effectiveness, and in terms of being consonant with collaborative processes. Similarly, being high on pro-military sentiment and on Theory X appear to go hand in hand with collaborative practices. Supervisory use of reward and punishment seems to make little contribution, on the other hand.

These findings are sufficiently startling that they deserve further discussion. Beginning with those concerning the apparent non-usefulness of reward and punishment, any of the following may be true:

- (1) The measures may be inaccurate.
- (2) They may assess what is an important factor in its impact upon other aspects of organizational life and effectiveness than those measured in this study.
- (3) Reward and punishment may, in fact, have little usefulness.

Let us consider the wording of the two items having to do with reward and punishment, equally weighted in comprising the Ascribed Influence index:



Q. 113 To what extent do people in your unit do what the supervisor wants because he can give special rewards to those who cooperate with him?

Q. 114 To what extent do people in your unit do what the supervisors wants because he can punish or make things difficult for those who do not cooperate?

(Scale: from 1 = to a very little extent to 5 = to a very great extent.)

The means, standard deviations, and numbers of cases for these two items in waves 3 and 4 were:

	Wave 3			Wave 4		
	Mean	S.D.	N	Mean	S.D.	N
Q. 113	2.66	1.11	5,941	2.66	1.11	5,011
Q. 114	3.33	1.14	5,955	3.30	1.16	5,003

Several things would seem to be apparent:

- Respondents do not appear to have been loathe to answer either of these questions.
- The responses, taken six months apart from slightly different samples in the same units, are almost identical, suggesting by their consistency that the effect is real.
- Item variances are comparable to those obtained for other items.
- Respondents in both waves report more reliance upon punishment than upon reward.

Whatever else may be true, it does appear that the items measure something consistently. The pattern of mean response is plausible, furthermore, if not necessarily appealing. No obviously strong case can be made for either restricted variance or social desirability in explaining the response pattern.

Although no assessment can be made of the usefulness of these measures in impacting things not otherwise measured, several points seem eminently clear:

- . Use of reward and punishment as a supervisory tactic has little effect, positive or negative, upon discipline.
- . It has little or no effect upon group loyalty.
- . It has little or no impact upon effectiveness.
- . It has little or no importance to the tenets of the Integrated Model which emerged from the structural equations analysis.

Taken with other findings previously mentioned, the picture presented is one which rather substantially disconfirms the Traditional mode. The effectiveness of Army units does not appear to result from a combination of external enforcement of standards, reward, punishment, and enforcement of discipline and obedience. Instead, discipline, clear enforcement of standards, obedience (in the form of willingness to deploy) and effectiveness all themselves result from the collaborative building of cohesive groups.

The shortcomings of a pure Collaborative model are equally interesting. Despite that model's prediction, endorsing more directive (or directing) management beliers and having a stronger pro-military sentiment do not go hand in hand with adaptation away from a collaborative organizational form. On the contrary, they accompany adaptation toward it.

More detailed scrutiny and a bit of reflection suggest a further interpretation of these findings. It is clear from the structural equations test of alternative models that the clusters of (a) hierarchical orientation, (b) structure, and (c) collaboration tend to go together. The first of these, hierarchical orientation, contains principally respect for authority and Theory X values. However, the items included in this last-named index reflect more that portion of Theory X dealing with a preference for structure and direction, than those reflecting negative assumptions about human beings, preference for autocratic treatment, and the like.

The structure cluster contains indexes of items measuring such characteristics as reasonable work loads, absence of unneressary confusion, pressure and stress, effective downward communication, and adequate equipment.

The fact that these two clusters tend to accompany collaborative practices suggests several possible interpretations not necessarily incompatible with one another. The first of these is that all of those positive conditions associated with unit effectiveness -- the maintenance of discipline, adherence to standards, willingness to deploy, intention to re-enlist, and unit performance -- seem to occur to the degree that these three conditions are present. To the extent that they are not present, effectiveness suffers.

The second is that, although no specific comparative tests were made of what happens when one or another of the three essential conditions are not present, it seems unlikely that the outcome, whatever it might be, would be positive. For example, manning units with highly counterdependent, authority-resistant persons who are basically anti-military in their sentiment would appear to be a choice with little likelihood of success where unit effectiveness is concerned. Attempting to compensate for personnel and resource shortages by greater centralization (with its attendant delays and confusion), heavier work loads, pressure and scrimping on equipment and maintenance would seem to be equally non-viable. Finally, attempting to keep things on an even keel by rejecting collaborative practices and adhering to a Traditional model, while perhaps a comfortable fit for some with command responsibility, would seem likely to have the most directly negative impact upon effectiveness.

However the coincidence of hierarchical orientation, structure, and collaborative treatment comes about, it is apparent that the combination has positive impact upon unit effectiveness. For this reason, it may have implications for military leadership, military training, and perhaps military recruiting:

- Military leadership should operate from a style which is supportive, facilitates the work, encourages performance goals, and builds teamwork. To do this, it should rely upon incremental influence and legitimate authority, but not upon reward and punishment. Direction, guidance, involvement and consideration seem desirable, not strong reward and punishment, and certainly not permissiveness.
- The immediate precursor of unit effectiveness is the teamwork or loyalty of cohesive groups, much as past research has shown. A portion of training might well focus upon the building of such groups and upon the sustaining of them through leadership and a collaborative climate.

- Persons who endorse the direction/structuring aspects of Theory X and who are pro-military in their personal beliefs may well thrive in a collaborative military environment. Attracting and recruiting such persons might advance the combined effect of these two factors. It should be emphasized, however, that this alone is likely to have a minor, not a major, impact upon effectiveness.

If the ideal positive combination can be imagined, so also can the worst or more negative: persons chronically resentful of authority or direction, antagonistic to the Army and its leadership, and treated non-collaboratively through the extensive use of reward and punishment. While this latter condition may well control undesirable outbursts, it seems from our findings unlikely to do much more than that. Certainly there is no evidence in this present study that it will contribute to unit effectiveness.

Next, it should be noted that the non-surrogate performance measures used in the final model testing at the company level consisted of ratings and rankings from several levels of command. Although, as the results indicated, questionnaire indexes of discipline and unit effectiveness related appropriately to those ratings and rankings, others such as re-enlistment intention did not. The latter, however, did relate significantly to actual re-enlistment rates. This would seem to suggest that superordinate commanders rate and rank units on a few, but by no means all, possible indicators. (Correlations of indexes with actual performance indicators are contained in Appendix J.)

Finally, it is useful to keep in mind the finding from the two-wave cross-lag analysis that the relationships from collaborative practices to effectiveness are in many instances reciprocal. Collaboration produces effectiveness, but effectiveness in turn promotes higher degrees of collaboration. Just as improvement should therefore over time be self-reinforcing, so declines will probably gather momentum as they go.

Our conclusions from these findings are the following:

- The model most appropriate to explaining -- or enhancing -- Army unit effectiveness is an Integrated Model which is basically collaborative, but with an emphasis upon respect for authority, openness to direction, and a clear structure.

- Discipline, obedience, and adherence to standards are more outcomes of collaborative practices than causes of them, although some reciprocal effect is present. Reward and punishment appear to have little instrumental usefulness in this sequence.
- In an Army setting, faith in the Army as an institution -- a pro-military sentiment -- is an important adjunct to the existence of collaborative practices.
- Unit performance ratings and rankings by commanders tend to confirm the perceptions of unit members on the survey concerning effectiveness. Moreover, there are sensible connections between each of these and hard record data on unit performance, although not all indicators relate to each rating, ranking, or perception.

#### Further Research Possibilities

The research carried out for this section of the report has raised a number of interesting future research possibilities. The models which we have presented here were all estimated on the entire data set, either at the individual or company level. Subsetting of the data within the scope of this current project was not possible given the current time frame and resources. A number of interesting questions, however, remain unaddressed.

- (1) Is there an effect of hierarchical level on the models we have presented here? Do officers' perceptions follow a different pattern than those of enlisted men? These analyses implicitly assumed that was no hierarchical effect. This, however, is an empirical question which could be addressed with the current data set.
- (2) Is there an effect of education on these models? The general linear model discussed in this study indicates that education has a substantial effect on some of the measures. It remains to be seen however, if these effects would result in a substantially different model of functioning for high and low education groups.
- (3) What is the effect of length of service? How does the orientation of those who re-enlist differ from those who do not? What effect does that have on performance?

- (4) Level of motivation has also been dealt with only briefly in this study. Do those with high motivation have a different orientation? How does it differ? How does that affect performance?
- (5) The hierarchical orientation cluster contains a number of measures of individual need for structure. Who has a high need for structure? Do they re-enlist? How does this impact on performance? Is this a company level or individual level phenomena?
- (6) A number of these items (3, 4, and 5) point to the socialization process. How does the individual's educational level influence their socialization experience? How does this vary among those who do and do not choose to re-enlist?
- (7) Finally, the data from different types of companies has been analyzed together in this analysis. The question remains -- are the conditions in intelligence companies different from infantry, artillery and administrative companies? Do these imply different models of effective performance?

All of these questions can be studied directly with the data which has already been collected. The data set which we now have is large enough to allow for subsetting on multiple dimension at once. While a number of interesting findings have emerged from this current study, a wide range of pertinent questions have not yet been addressed.

### 5.6 Summary

This section of the final report has presented findings from a test of Traditional and Collaborative models of Army unit functioning. The purpose of the research was to determine empirically the nature of that model best suited to enhancing unit effectiveness.

Survey measures from two waves of data collected from personnel in approximately 250 companies, drawn from approximately 50 battalions, were analyzed. Company performance ratings, rankings, and imputed record data from the battalion level were employed as well.

Analyses were of two types and conducted at two levels. The first consisted of 122 correlational tests of eight major hypotheses contrasting the Traditional and Collaborative models. The second involved the use of a structural equations modeling technique to test the two pure models and produce an Integrated Model which best explained the existing relationships in the data.

- . Neither a pure Traditional nor a pure Collaborative model was confirmed.
- . An Integrated Model seems, instead, best suited to explaining the data. While more Collaborative than Traditional in form, this revised model contains positive components from respect for authority, pro-military sentiment, and direction or structure-seeking portions of Theory X. Far from being a contrariant addendum, these components appear to be valuable adjuncts to the functioning of collaborative practices in an Army setting.
- . It would appear that such valuable aspects of unit functioning as the existence of discipline, adherence to standards, willingness to deploy, and unit effectiveness are outcomes of collaborative practices, rather than conditions which come into being through the use of reward and punishment.
- . While within waves there was evidence supporting a causal thrust which runs from collaborative practices to effectiveness, across waves the findings suggested a not insignificant reciprocal effect, such that effectiveness enhances collaboration.

The findings suggested valuable lines for future research including:

- (1) The effects of hierarchical level on this model and on performance.
- (2) The effects of function: do intelligence, infantry, and administrative companies differ in regard to the model of performance which we have outlined?
- (3) The effects of education, motivation, and need for structure on the collaboration process, performance and socialization into the military.



## Chapter 6

### CONCLUSIONS AND SUGGESTIONS

This chapter contains brief summaries of the two threads of the present research activities as well as suggestions for future investigation. While the former are tied directly to early parts of this report, the latter cover a broad spectrum of issues generated by the process of the present research.

The focus of one part of this research was the location of the critical source of sources of variance in local Army unit functioning. Stated in simpler form, is the prime source of inter-unit difference:

- The Division
- The Brigade
- The Battalion
- The units (companies) themselves
- Or the people who make them up?

The answers are several-fold, but consistent:

- . In part, the source of variance is the people themselves, particularly their education and race.
- . The division to which the company belongs and battalion function have some effect, but much less than the companies themselves.
- . Brigades and battalions have little or no impact.
- . Demographic effects do not rise in importance when company, rather than individual level data are considered.

These findings raise some question about the often postulated notion that military organizations have become highly centralized or "climate driven". To be sure, there are issues of weaponry, strategy, tactics, and the like which may be, in fact, highly centralized and which may affect unit performance, but which were not assessed in the present study. On the other

hand, characteristics of how units function as organizational entities were assessed with some comprehensiveness, and the findings provide relatively little evidence of top-down impact.

If anything, the findings are somewhat conservative by their method. Within hierarchy, any inter-Divisional variance was first attributed to the Division level, even though it could conceivably have stemmed from Company configuration sources. Similarly, anything attributable to Brigade or Battalion levels was taken out before Company-level differences were examined. Even with this, the hierarchical level which accounted for the greatest amount of variance was the Company.

The findings appear to indicate that the pattern of leadership, organizational excellence, discipline, adherence to standards, and willingness to deploy which exist in a Battalion are largely a function of the Companies that make it up. Similarly, the pattern for a Brigade is largely of a function of the Companies which make it up. Divisions, as such, have more influence than Brigades or Battalions over what exists, but not a great deal.

Of course, this says nothing about what might exist. It talks instead about what does occur. Changes in policy, in practices, in training or development strategies for effectiveness could conceivably alter the variance distribution. At present, however, it would appear that the prime organizational source of effect is the Company.

The second part of the research dealt with the sequence of events which best accounts for unit effectiveness -- the model of organizational functioning which the data suggest best fits the Army. The results indicated that neither the Traditional nor a purely Collaborative model is optimal. Instead, what seemed best to account for conditions as described in Army units is an Integrated or composite model, one which draws upon certain characteristics of each of the other two.

The characteristics which this Integrated model draws from the Traditional model are more those of persons, their orientations, and their values. The characteristics which it draws from the Collaborative viewpoint are those of practices, behavior, and treatment. It suggests that unit

effectiveness will be maximized when units are (a) composed of persons with some amenability to structure and direction and some respect for legitimate authority, and (b) commanded or led by a style which is collaborative or participative.

If this is the best of situations, it might be inferred that the worst of situations would be one in which units contained large numbers of persons who resent direction and reject authority, commanded and led according to a traditional, order-and-obedience model. This ineffective combination has more than passing likelihood of occurring, furthermore, particularly as either conscription or economic pressures bring a wider array of young persons into the Army. Previous research has shown a decided trend, tied in all probability to educational levels and practices, for young persons to reject the structuring, directive principles of Theory X (Bowers & Franklin, 1977). On the other hand, evidence also suggests that, in unfavorable situations, supervisors tend to revert to their familiar, preferred style (Michaelson, 1973). The present findings suggest that, while units might have their full complements of persons, in such a situation they would be likely to be less effective.

While the results of the present analysis as outlined above are rather significant, the data set from which they were drawn is still rather a rich source for further investigation. Identified below are a series of topical issues which have come to mind but not addressed during the present work.

- . If there existed comparable survey data at higher levels of command, would the hierarchical results be the same and would the same organizational functioning model still be best?
- . The criterion data (performance records and ratings and rankings from commanders) ought to be assessed for internal structure, relationships of the performance measures with the rankings and ratings, and an analysis of the time factor in these measures.
- . The effectiveness data could be added to the analysis which explored for hierarchical effects.

- Subsetting the data set in a variety of ways to explore possible differences in results according to the cuts in the data. For example, one question might be, "Do the practice portions of the model hold equally well for...?"
  - i) people who are high on Theory X and military sentiment;
  - ii) combat battalions versus battalions which serve as support units (e.g., military intelligence, maintenance, or engineering);
  - iii) various demographic groups defined by such things as race, education and marital status.
- What are the "minimally acceptable" levels of performance within the discipline measures? Do they vary across functional units? If its possible to define an optimal mix of individuals for, say an infantry battalion, is there another mix available for support units?
- It would be of interest to explore company function effects: with the primary hierarchical source of variance being the company, and with battalion function being a slight influence, the logical extension would be to explore the explanatory capabilities of company functions.
- The ratings of companies seem to be somehow related to the equipment readiness measure. In the survey or elsewhere, there are no measures of hardware characteristics such as complexity, availability, or conditions, and how these enhance or impede the work of a unit. This topic would seem to merit some elementary exploration.
- The questionnaire measures of unit effectiveness perform fairly well as a surrogate effectiveness measure. If it is possible to construct a general factor of effectiveness from the criterion data, then it would be of interest to explore the time lag characteristics between this general effectiveness measure and the surrogate measure.
- The items in the questionnaires given E1-E4's which ask about their basic training (Wave 3, item numbers 120-122) may show provocative relationships with current perceptions of organizational climate and of models of effective functioning. In particular, if strong relationships are shown to exist, the intervention most likely to improve organizational effectiveness would be at the basic training level.

- The correlation matrix data in the model testing used battalion scores imputed to companies. This means the correlations are understated in magnitude. Also, the absence of perfect reliability in the survey measures leads to understated correlation coefficients. Thus, the percentage of actual variance accounted for may be very high.
- The questions asked of officers regarding their exposure to and attitudes about the Army's Organizational Effectiveness (OE) Program have not been analyzed as to their impact on other survey measures. Also, a unit's utilization of OE programs ought to be considered, both in terms of survey measures and performance records.
- The command history of both companies and battalions could be used to explore the impact of command changes, the length of time one has been in command at the time of the survey, and any time lag effects of command changes. For example, are battalions such that they are somewhat impervious to most command changes at the top, but companies are responsive to them? Are there some aspects of organizational climate that change or change more rapidly, than others?
- The single question about career intentions may also be rather significant in its ability to explain individual and unit differences. However, the other side of that issue is that maybe company differences on other survey measures can be used to explain company differences in re-enlistment intentions.
- While education is an important demographic variable in explaining differences, it is contaminated with both grades and rank. The construction of a new composite variable, education X grades, may have different explanatory capabilities, but all of these ought to be examined by controlling for rank.
- While the presence and relative magnitudes of unit effects has been isolated, of further interest would be association of those effects with particular unit characteristics. For instance, can division effects be associated with battalion commander training programs?
- Considerable opportunities exist to look at unit change over time, more than just those associated with command changes as discussed above. The types of changes that are experienced internally could also be associated with external or environmental changes.

- Some questionnaire items identified the nature of a unit's relations with other units. While this may be significantly intertwined with company function, it may contribute simplification to the organizational functioning model.

## Chapter 7

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## APPENDIX A

### INDEX COMPOSITION

The table on the following pages briefly describes the survey indices used in the analyses. The first column identifies the variable number and reference name by which the index is identified in other tables. The second column consists of a short index description. The third column identifies the survey questions which were included in construction of the index. The complete questions can be referred to in the questionnaire, reproduced in Appendix E.

# INDEX COMPOSITION

Analyst Variable 1	Short Index Description	Survey Questions Included <sup>2</sup> (Equally Weighted)
801 (ORGCLA)	Organizational Climate A	Q28: Officers care about individual Q44: Senior NCOs look out for individual Q45: Meetings meaningful Q46: Decisions made at info level Q49: Unit try new methods Q52: Workload and time considered Q61: Info received accurate
802 (ORGCLB)	Organizational Climate B	Q11: Too much work Q13: Work extra hours Q15: Too busy for training Q17: Pressures spill off-duty Q20: Feel tired Q21: Army rules impede work Q23: Unit gets news late Q24: Events cancelled at last minute Q26: Hard to get needed equipment
803 (SUPLDA)	Supervisory Leadership A	Q22: Supervisor listens to problems Q25: Supervisor encourages best efforts Q36: Suggestions accepted Q62: Supervisor fair Q71: Satisfied with supervisor Q79: Supervisor tries best
804 (SUPLDB)	Supervisory Leadership B	Q27: Supervisor gives conflicting info Q30: Unnecessary overtime Q32: Supervisor doesn't pay attention Q35: Other supervisors interfere Q43: Big jobs late in day Q54: Supervisor doesn't consult men Q60: Supervisor won't explain actions

<sup>1</sup> This analysis variable reference shows up in later tables.

<sup>2</sup> Question numbers refer to the wave 3 questionnaire.

# INDEX COMPOSITION

Analysis Variable 1	Index Description	Survey Questions Included <sup>2</sup> (Equally Weighted)
805 (GROUPCOH)	Group Cohesivness	Q40: Soldiers get along w/each other Q72: Satisfied with work group Q77: Work group members do best
806 (JOBCH)	Job Challenge	Q16: Job important Q51: Sense of accomplishment Q69: Job respected Q74: Enjoy work Q76: Satisfied with job
807 (MOTV)	Motivation	Q18: See jobs role Q19: I have responsibility Q58: Emphasis on accomplishment Q59: Contribute my best efforts Q78: Try my best
808 (LOYALTY)	Loyalty to Organization	Q65: Satisfied with unit Q66: Opportunity for advancement Q73: Satisfied with army Q75: Fair deal from army
809 (DEPLOY)	Willingness to Deploy	Q92: Deploy: small chance enemy contact Q93: Deploy: good chance enemy contact Q94: Battle against weaker enemy Q95: Battle against equal enemy
810 (EFFECT)	Unit Effectiveness	Q42: Unit respected Q81: Evaluation of company Q82: Comparison with others Q83: Improvements needed

<sup>1</sup> This analysis variable reference shows up in later tables.

<sup>2</sup> Question numbers refer to the wave 3 questionnaire

# INDEX COMPOSITION

Analysis Variable 1	Index Description	Survey Questions Included <sup>2</sup> (Equally Weighted)
811 (ARMYREF)	Army/Unit Reference Group	Q90: Best friends in unit Q91: Best friends in army
812 (DISC)	Discipline	Q29: Drinking not unit problem Q33: Drugs not unit problem
813 (STANDS)	Standards Enforcement	Q47: SOP followed Q56: Rules enforced
814 (SENT)	Military Sentiment <sup>3</sup>	Q107: Army leaders smart Q108: Army officers try best Q109: Army leaders trustworthy
815 (INCRINFL)	Incremental Influence <sup>3</sup>	Q115: Supervisors respected Q116: Supervisor liked
816 (THYX)	Theory X Beliefs <sup>3</sup>	Q118: Must be firm w/subordinates Q119: Must watch subordinates Q120: Must structure subordinate's work Q121: Subordinates prefer direction
817 (ASCINFL)	Ascribed Influence <sup>3</sup>	Q113: Supervisor uses rewards Q114: Supervisor uses punishment
36 (Know day-to-day)	Assignments	Q9: Know daily assignment
97 (Sat. with pay)	Pay	Q70: Satisfied with pay
111 (Describes career)	Career	Q84: Career intentions

<sup>1</sup> This analysis variable reference shows up in later tables.

<sup>2</sup> Question numbers refer to the wave 3 questionnaire.

<sup>3</sup> The questions comprising these indices were not included in wave 2.

# INDEX COMPOSITION

Analysis Variable 1	Index Description	Survey Questions Included <sup>2</sup> (Equally Weighted)
138 (Ext. Std. Mntd.)	Standards <sup>3</sup>	Q111: Extent standards maintained (Q112, version II)
139 (Ext. Resp. Auth.)	Authority <sup>3</sup>	Q112: Extent supervisory authority respected (Q113, version II)
144 (Ext. Owe Unit)	Owe Unit <sup>3</sup>	Q117: Extent owe unit (Q118, version II)
149 (Unit Rel w/other)	Unit Relationships <sup>3</sup>	Q122: Relationship w/other units (Q123, version II)
150 (Exch. w/other)	Unit Exchanges <sup>3</sup>	Q123: Exchanges w/other units (Q124, version II)
<u>INDICES RELATING TO VERSION II ONLY</u>		
156 (Effect Of Batt.)	Battalion Effectiveness	Q96: Evaluation of battalion
157 (Compared how effect)	Battalion Comparison	Q97: Comparison with others
158 (How many impvmts.)	Battalion Improvements	Q98: Improvements needed

<sup>1</sup>This analysis variable reference shows up in later tables.

<sup>2</sup> Question numbers refer to the wave 3 questionnaire.

<sup>3</sup> The questions comprising these indices were not included in wave 2.

## APPENDIX B

### COEFFICIENTS OF PARTIAL DETERMINATION

The tables on the following pages present the coefficients of partial determination ( $R^2$ ) for each index, by factor and wave. Parentheses indicate that the factor effect was not significant at the .005 level.

# WAVE 2: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference	Stage One Demographics	Stage Two Function	Stage Three Division	Stage Four Brigade	Stage Five Battalion	Stage Six Company
ORGCLA	.0714	.0049	.0058	.0075	.0038	.0557
ORGCLB	.0552	.0093	.0115	.0098	.0069	.0544
SUPLDA	.0567	.0147	.0044	(.0068)	(.0056)	.0451
SUPLDB	.0444	.0155	.0061	.0089	.0082	.0518
GROUPCOH	.0292	.0087	.0036	(.0045)	(.0042)	.0468
JOBCH	.0615	.0236	.0046	(.0068)	(.0038)	.0523
MOTIV	.0983	.0110	.0058	(.0059)	(.0028)	.0433
LOYALTY	.0811	.0071	.0086	.0073	(.0059)	.0546
DEPLOY	.0692	.0058	.0045	(.0027)	(.0039)	(.0311)
EFFECT	.0454	.0049	.0134	.0093	.0087	.0708
ARMYREF	.0092	(.0038)	(.0010)	(.0033)	(.0034)	(.0342)
DISC	.0251	.0104	.0040	(.0043)	(.0041)	.0545
STANDS	.0187	.0073	(.0027)	.0087	(.0031)	.0446
SENT	NA	NA	NA	NA	NA	NA
INCRINFL	NA	NA	NA	NA	NA	NA
THYX	NA	NA	NA	NA	NA	NA
ASCINFL	NA	NA	NA	NA	NA	NA

<sup>1</sup> Parentheses indicate effect was not significant at .005 level. NA indicates analysis was not performed for these indices.



# WAVE 2: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference (Continued)	Stage One Demographics	Stage Two Function	Stage Three Division	Stage Four Briade	Stage Five Battalion	Stage Six Company
Assignments	.0295	(.0048)	.0081	.0096	.0088	.0599
Pay	.0226	.0082	.0047	.0060	.0039	(.0356)
Career	.1344	.0060	.0033	.0039	.0032	.0382
Standards	NA	NA	NA	NA	NA	NA
Authority	NA	NA	NA	NA	NA	NA
Owe Unit	NA	NA	NA	NA	NA	NA
Unit Rel.	NA	NA	NA	NA	NA	NA
Unit Exch.	NA	NA	NA	NA	NA	NA
Batt. Effect.	.0728	NA	NA	NA	NA	NA
Batt. Comp.	.0908	NA	NA	NA	NA	NA
Batt. Impr.	.0630	NA	NA	NA	NA	NA

<sup>1</sup> Parentheses indicate effect was not significant at .005 level. NA indicates analysis was not performed for these indices.

# WAVE 3: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference	Stage One Demographics	Stage Two Function	Stage Three Division	Stage Four Brigade	Stage Five Battalion	Stage Six Company <sup>2</sup>
ORGCLA	.073	.008	.016	.017	.011	.066 [2.9%*]
ORGCLB	.052	.013	.011	.011	.012	.063 [6.7%*]
SUPLDA	.055	.011	.012	.011	.009	.066 [6.7%*]
SUPLDB	.043	.016	.011	(.006)	.010	.068 [5.8%*]
GROUPCOH	.025	.015	.007	(.009)	.010	.060 [1.9%]
JOBCH	.048	.032	.006	(.008)	(.006)	.066 [10.2%*]
MOTIV	.076	.007	.011	(.009)	(.007)	.062 [4.3%*]
LOYALTY	.076	(.005)	(.001)	(.001)	(.003)	.061 [0.0%]
DEPLOY	.068	.007	.019	(.008)	(.007)	(.047)[0.0%]
EFFECT	.040	.013	.018	.029	.016	.080 [1.3%]
ARM/REF	.013	(.004)	(.001)	(.005)	(.005)	(.037)[0.0%]
DISC	.032	.018	(.004)	(.007)	.012	.060 [1.8%]
STANDS	.021	.007	.005	(.009)	.013	(.056)[1.0%]
SENT	.072	(.006)	.010	(.008)	.011	(.046)[2.1%]
INCRINFL	.021	.009	.005	(.008)	(.005)	.059 [3.0%*]
THYX	.049	(.005)	(.003)	(.009)	(.007)	(.054)[0.8%]
ASCINFL	(.005)	(.004)	(.001)	(.005)	(.004)	(.056)[2.0%]

<sup>1</sup> Parentheses indicate effect was not significant at .005 level.

<sup>2</sup> Bracketed percentages indicate the portion of company effects identifiable with company function. If this effect was statistically significantly different than zero, an asterisk appears. The coefficient of partial determination for the company function effect is the reported percentage of the reported coefficient for the total company effect.

# WAVE 3: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference (Continued)	Stage One Demographics	Stage Two Function	Stage Three Division	Stage Four Brigade	Stage Five Battalion	Stage Six Company <sup>2</sup>
Assignments	.0320	.0228	(.0023)	(.0057)	(.0065)	.0642 [10.2%*]
Pay	.0209	(.0032)	(.0037)	(.0052)	(.0045)	(.0398)[4.9%*]
Career	.1459	.0079	.0091	(.0053)	(.0062)	(.0428)[0.4% ]
Standards	.0188	.0105	.0046	(.0089)	(.0084)	.0630 [0.6% ]
Authority	.0397	.0075	.0050	(.0075)	(.0067)	(.0486)
Owe Unit	.0341	.0073	.0063)	(.0079)	.0107	(.0477)[0.8% ]
Unit Rel.	.0106	.0131	(.0029)	(.0064)	(.0050)	(.0521)[3.7%*]
Unit Exch.	.0210	.0148	(.0015)	(.0051)	(.0028)	(.0444)[2.0% ]
Batt. Effect.	.0699	.0190	.0232	.0302	.0315	(.0906)
Batt. Comp.	.0957	.0120	.0273	.0326	.0311	(.0866)
Batt. Impr.	.0784	(.0066)	.0133	.0333	.0365	.1018

<sup>1</sup> Parentheses indicate effect was not significant at .005 level.

<sup>2</sup> Bracketed percentages indicate the portion of company effects identifiable with company function. Absence of an entry means that this data was unavailable. If the effect was statistically significantly different than zero, an asterisk appears. The coefficient of partial determination for the company function effect is the reported percentage of the reported coefficient for the total company effect.

# WAVE 4: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference	Stage One Demographics .0718	Stage Two Function .0081	Stage Three Division (.0007)	Stage Four Brigade (.0063)	Stage Five Battalion (.0032)	Stage Six Company <sup>2</sup> .0621 [0.0% ]
ORGCLB	.0483	.0191	(.0019)	(.0048)	(.0049)	.0601 [2.9%*]
SUPLDA	.0628	.0087	(.0012)	(.0044)	(.0028)	.0515 [9.3%*]
SUPLDB	.0535	.0158	(.0020)	(.0042)	(.0024)	.0657 [9.8%*]
GROUPCOH	.0382	.0115	.0046	.0098	.0080	.0507 [1.5% ]
JOBCH	.0696	.0212	(.0004)	(.0040)	(.0034)	.0540 [4.0%*]
MOTIV	.0949	.0056	(.0014)	(.0034)	(.0038)	.0485 [4.7%*]
LOYALTY	.0821	(.0047)	.0039	(.0067)	(.0040)	.0507 [0.0% ]
DEPLOY	.0824	.0137	.0119	(.0067)	.0085	(.0329)[0.0% ]
EFFECT	.0404	.0229	.0107	.0120	(.0059)	.0991 [0.1% ]
ARMYREF	.0140	(.0035)	(.0004)	(.0051)	(.0050)	(.0314)[0.0% ]
DISC	.0269	.0087	(.0014)	(.0038)	(.0059)	.0490 [0.0% ]
STANDS	.0141	.0087	.0055	(.0086)	(.0039)	(.0406)[1.4% ]
SENT	.0898	.0086	(.0012)	(.0050)	(.0033)	.0499 [0.0% ]
INCRINFL	.0296	(.0050)	(.0009)	(.0041)	(.0033)	.0528 [0.5% ]
THYX	.0586	.0059	.0025	(.0056)	(.0051)	(.0388)[0.2% ]
ASCINFL	.0101	(.0043)	.0047	(.0034)	(.0045)	(.0384)[0.0% ]

<sup>1</sup> Parentheses indicate effect was not significant at .005 level.

<sup>2</sup> Bracketed percentages indicate the portion of company effects identifiable with company function. If this effect was statistically significantly different than zero, an asterisk appears. The coefficient of partial determination for the company function effect is the reported percentage of the reported coefficient for the total company effect.

# WAVE 4: COEFFICIENTS OF PARTIAL DETERMINATION<sup>1</sup>

Index Reference (Continued)	Stage One Demographics	Stage Two Function	Stage Three Division	Stage Four Brigade	Stage Five Battalion	Stage Six Company <sup>2</sup>
Assignments	.0297	.0181	(.0029)	(.0048)	(.0021)	.0518 [9.9%*]
Pay	.0226	(.0041)	(.0022)	(.0039)	(.0015)	(.0355)[0.0% ]
Career	.1421	(.0034)	(.0019)	(.0038)	(.0028)	(.0395)[0.2% ]
Standards	.0230	.0075	.0100	.0088	(.0044)	(.0423)[0.2% ]
Authority	.0428	(.0043)	.0055	(.0054)	.0078	.0461 [0.0% ]
Owe Unit	.0307	(.0050)	(.0036)	(.0049)	(.0036)	.0551 [0.5% ]
Unit Rel.	.0193	.0162	(.0033)	(.0087)	(.0034)	(.0449)[6.2%*]
Unit Exch.	.0164	.0137	(.0024)	(.0039)	(.0029)	.0930 [4.4%*]
Batt. Effect.	.0626	.0492	.0173	(.0148)	(.0087)	(.0887)
Batt. Comp.	.0660	.0361	.0219	(.0173)	(.0142)	.0948
Batt. Impr.	.0495	.0255	.0122	(.0147)	(.0077)	(.0862)

<sup>1</sup> Parentheses indicate effect was not significant at .005 level.

<sup>2</sup> Bracketed percentages indicate the portion of company effects identifiable with company function. Absence of an entry means that this data was unavailable. If the effect was statistically significantly different than zero, an asterisk appears. The coefficient of partial determination for the company function effect is the reported percentage of the reported coefficient for the total company effect.

## APPENDIX C

### SPECIFIC EFFECTS

The tables on the following pages present a summary of the significant factor effects, including the specific demographic factors for each wave. A '+' indicates a factor effect statistically significant at the .005 level.

# WAVE 2: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital Status	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
ORGCLA		+		+	+		+	+	+	+	+
ORGCLB	+			+			+	+	+	+	+
SUPLDA		+	+	+	+	+	+	+			+
SUPLDB	+			+	+		+	+	+	+	+
GROUPCOH		+	+	+	+		+	+			+
JOBCH		+	+	+	+		+	+			+
MOTIV		+	+	+	+	+	+	+			+
LOYALTY		+	+	+	+	+	+	+	+		+
DEPLOY	+			+	+		+	+			
EFFECT		+		+	+		+	+	+	+	+
ARMYREF					+						
DISC		+		+	+		+	+	+		+
STANDS				+	+		+				+
SENT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INCRINFL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THYX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ASCINFL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1A '+' indicates significance at the .005 level.

NA indicates that the analysis was not run on this index.

# WAVE 2: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital Status	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
(Continued)											
Assignments				+	+			+	+	+	+
Pay	+			+	+	+		+			
Career	+		+	+	+	+		+			+
Standards	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Authority	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Owe Unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unit Rel.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Unit Exch.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Batt. Effect.					+		NA	NA	NA	NA	NA
Batt. Comp.					+		NA	NA	NA	NA	NA
Batt. Impr.					+		NA	NA	NA	NA	NA

<sup>1</sup>A '+' indicates significance at the .005 level.  
 NA indicates that the analysis was not run on this index.



# WAVE 3: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital Status	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
ORGCLA			+	+	+	+	+	+	+	+	+
ORGCLB	+			+			+	+	+	+	+
SUPLDA					+	+	+	+	+	+	+
SUPLDB				+	+		+	+	+	+	+
GROUPCOH				+	+	+	+	+	+	+	+
JOBCH			+		+		+	+			+
MOTIV	+	+	+		+	+	+	+			+
LOYALTY			+	+	+						+
DEPLOY	+			+	+	+	+	+			
EFFECT	+				+	+	+	+	+	+	+
ARMYREF					+	+					
DISC				+	+		+		+	+	+
STANDS	+			+	+	+	+	+	+	+	
SENT					+			+		+	
INCRINFL				+	+		+	+			+
THYX	+		+								
ASCINFL											

<sup>1</sup>A '+' indicates significance at the .005 level.

# WAVE 3: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital Status	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
(Continued)											
Assignments				+	+		+				+
Pay				+	+						
Career	+		+	+	+	+	+	+			
Standards				+	+		+	+			+
Authority				+	+		+	+			
Owe Unit				+	+	+	+	+		+	
Unit Rel.					+		+				
Unit Exch.				+		+	+				
Batt. Effect.				+	+		+	+	+	+	
Batt. Comp.	+			+	+	+	+	+	+	+	
Batt. Impr.					+			+	+	+	+

<sup>1</sup>A '+' indicates significance at the .005 level.

# WAVE 4: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
ORGCLA				+	+		+				+
ORGCLB	+			+			+				+
SUPLDA		+			+		+				+
SUPLDB				+	+	+	+				+
GROUPCOH		+		+	+	+	+	+	+		+
JOBCH			+	+	+		+				+
MOTIV		+	+		+	+	+				+
LOYALTY				+	+			+			+
DEPLOY	+			+	+		+	+		+	
EFFECT	+				+		+	+	+		+
ARMYREF			+		+						
DISC				+	+		+				+
STANDS				+	+		+	+			
SENT	+				+		+				+
INCRINFL				+	+						+
THYX	+		+	+	+		+	+			
ASCINFL								+			+

<sup>1</sup>A '+' indicates significance at the .005 level.

# WAVE 4: SPECIFIC EFFECTS<sup>1</sup>

Index Reference	Sex	Marital Status	Housing	Race	Education	Grades	Function	Division	Brigade	Battalion	Company
(Continued)											
Assignments				+	+		+				+
Pay	+				+	+					
Career		+	+	+	+	+					
Standards					+		+	+			
Authority	+			+	+			+			+
Owe Unit				+	+						+
Unit Rel.	+				+		+				
Unit Exch.					+		+				
Batt. Effect.					+		+	+			
Batt. Comp.					+		+				+
Batt. Impr.					+		+	+			

<sup>1</sup>A '+' indicates significance at the .005 level.

APPENDIX D

DIRECTIONS FOR SURVEY ADMINISTRATION

WAVE 4

November, 1979

Instructions for Command Climate Survey

I'm \_\_\_\_\_ and this is \_\_\_\_\_.

We are part of a data collection team from the University of Michigan working under contract from the Army. The purpose of this study is to examine how personnel policies and leadership and management practices affect the morale and effectiveness of Army units. The findings of this study will be used in the formulation of Army-wide policies and priorities. It is through such means as this questionnaire that you can provide input into decisions on what policies are formulated and what priorities are established at the Dept. of the Army level.

This is not a test. There are no right or wrong answers. If the results are to be helpful, it is important that you respond to all statements as thoughtfully and frankly as possible. Your ideas are important and can provide a valuable contribution. Do not simply agree with your friends or say what you think others expect you to say.

We will be asking that you write your Social Security Number (SSN) on the answer sheet. The purpose of asking your SSN is to allow us at some future date to ask the Military Personnel Center (MILPERCEN) which of the individuals with these SSNs left the Army, received awards, etc. This will then allow us to categorize the data to determine the consequences of the attitudes and perceptions measured on this questionnaire.

All answers on this questionnaire are treated as confidential. The completed questionnaires will be processed by computer and the results summarized in statistical form. Therefore, even though you are providing your SSN, your response on this questionnaire will be analyzed only in conjunction with those of other people, and confidentiality is maintained.

---

Turn your answer sheet so that you are looking at the grids marked D thru Z.

1. In the grid marked D, please enter your social security number by, first, writing the number in the boxes above the grid. Then, below each box, blacken the circle that is numbered the same as the number in the box.

The remaining grids should be filled in in the same manner.

2. In grid E, fill in this battalion code (list battalion code on blackboard). Again, both write in the number and fill in the circles.
3. Fill in the code of your company (battery) (on blackboard) in grid F.
4. In grid G, enter the number of months you've been in your unit. If it is less than 10, say 6, code in zero-six.
5. Enter the number of dependents you have in grid H (excluding yourself).
6. In Grid I, code 1 if you have a Blue booklet, 2 if you have a gold booklet.
7. Grid J will be used for pay grade. In the first column, enter a '2' if you are enlisted, a '1' if you are a warrant officer, or a '0' if you are a commissioned officer.

In the second column, blacken the circle that indicates your paygrade. Enter, for example, a '3' if you are an E-3, a WO-3, or an O-3; a '4' if you are an E-4, or a O-4; and so on.

8. In Grid K and L, enter the number of years you have been in the Army. If that number is less than 10, put zero in Grid K, and the number in L.
9. In Grid M (Mary) and N, write in your age and fill in the corresponding circles.

Please make sure that you have both written in the numbers and filled in the appropriate circles beneath them in grids D through N. Grids O through Z are to be left blank.

Now turn your answer sheet over and look at the box containing Instructions for using this answer sheet. Read this section to yourself while I read it aloud. (READ INSTRUCTIONS ALOUD)

Company Codes

(0 None)

1 A Alpha

2 B Bravo

3 C Charlie

4 D Delta

5 HHC Headquarters

6 E

7 F

9 CSC Combat Support

NOTE TO DATA COLLECTION TEAM: (The Code 8 can be defined as necessary and other codes from 1-9 can be redefined as needed. Please be certain to fill out the company code definitions used on the checklist.)



**APPENDIX E**

**WAVE 3 QUESTIONNAIRES**

## COMMAND CLIMATE

## VERSION I

This questionnaire is designed to learn more about the day-to-day life in your unit or section. The purpose is to allow every individual to contribute to an accurate picture of the unit.

This is not a test and there are no right or wrong answers. If the results are to be helpful, it is important that you respond to all statements as thoughtfully and frankly as possible. Your ideas are important and can provide a valuable contribution. Do not simply agree with your friends or say what you think others expect you to say.

All answers to this questionnaire are considered confidential. The completed questionnaires will be processed by computer and the results summarized in statistical form. Your individual responses will remain strictly confidential since they will be combined with those of many other people. Any background information that you list will be used to sort people into large groups and will not be used to identify you personally.

Read the instructions carefully before you begin responding to the statements. Thank you very much for your cooperation in completing this questionnaire.

DATA REQUIRED BY THE PRIVACY ACT OF 1974 (5 U.S.C. 552a)	
TITLE OF FORM PT 5203a(R2), Command Climate -- Version I	PRESCRIBING DIRECTIVE AR 70-1
1. AUTHORITY 10 USC Sec 4503	
2. PRINCIPAL PURPOSE(S) The data collected with the attached form are to be used for research purposes only.	
3. ROUTINE USES This is an experimental personnel data collection form developed by the U.S. Army Research Institute for the Behavioral and Social Sciences pursuant to its research mission as prescribed in AR 70-1. When identifiers (name or Social Security Number) are requested, they are to be used for administrative and statistical control purposes only. Full confidentiality of the responses will be maintained in the processing of these data.	
4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION Your participation in this research is strictly voluntary. Individuals are encouraged to provide complete and accurate information in the interests of the research, but there will be no effect on individuals for not providing all or any part of the information. This notice may be detached from the rest of the form and retained by the individual if so desired.	

FORM Privacy Act Statement 26 Sep 75

DA Form 4368-R, 1 May 75

### INSTRUCTIONS

1. This questionnaire has two parts: an answer sheet and a question booklet. The section that you are now reading is the question booklet. Check to see that you have an answer sheet.
2. Read each statement carefully.
3. As soon as you understand a statement, decide how much you agree with it. Your first impressions are more valuable than your second thoughts.
4. After you have decided on your answer, it will be recorded on the separate Answer Sheet that indicates the amount of your agreement.
5. If no answer category exactly expresses your thoughts, use the best answer available. Be sure to mark only one answer for each statement and to respond to all statements.
6. Be sure to follow the answer sheet carefully. Match the numbers on the answer sheet with the number of each statement.
7. Please use a pencil in completing this form.
8. Please do not make any marks on the Questionnaire Booklet.

### DEFINITIONS

In filling out this questionnaire, please use the following definitions:

"Your supervisor" - the person who gives you your day-to-day work assignments and evaluates your work.

"Your unit" - your company/troop/battery.

"Your work group" - the group of people that you work with on a day-to-day basis.

## SECTION A

In this section each question has the scale printed under it. Put your answer to these questions (numbers 1 to 6) on the answer sheets.

1. Sex

- A. Male
- B. Female

2. Marital Status

- A. Single
- B. Married, living with family
- C. Married, separated from family due to lack of affordable housing
- D. Married, separated from family due to other reasons
- E. Divorced

3. Housing

- A. On post - barracks
- B. On post - family housing
- C. On post - other
- D. Off post - government furnished housing
- E. Off post - civilian housing

4. Race/Ethnic Group

- A. Black
- B. Hispanic (Chicano, Mexican-American, Puerto Rican)
- C. Native American (American Indian, Aleut)
- D. White
- E. Other

5. Is your present salary sufficient to provide you with a decent standard of living?

- A. I can live quite comfortably within my salary.
- B. My salary is adequate to meet my needs.
- C. It is difficult to live decently with my salary.
- D. Trying to live within my salary imposes a great hardship on me and my family (if any).
- E. I can get by on my salary only by going heavily in debt.

6. What is your level of education?

- A. Less than high school
- B. High school or G.E.D. diploma
- C. Some college
- D. College degree
- E. Advanced degree

## SECTION B

The following scale is used to indicate your agreement or disagreement with statements (7-79).

- | A                    | B                    | C       | D                 | E                 |
|----------------------|----------------------|---------|-------------------|-------------------|
| Strongly<br>Disagree | Somewhat<br>Disagree | Neutral | Somewhat<br>Agree | Strongly<br>Agree |
7. My job gives me the chance to learn skills that are useful outside the Army.
  8. In my job, I can tell how well I am doing without other people telling me.
  9. I know what I will be doing from day to day.
  10. My job requires high-level technical skills.
  11. In my job, I have more work to do than one person can handle.
  12. My job lets me use my skills and training.
  13. In my job, I have to work extra hours.
  14. My job lets me do the things I am good at.
  15. My job keeps me too busy to take extra training programs.
  16. My job gives me the feeling that I have done something important.
  17. The pressures of my job spill over into my off-duty life.
  18. I can see what my job has to do with others in my unit.
  19. I have full responsibility for doing certain parts of my job.
  20. My job leaves me feeling tired at the end of the day.
  21. Army rules and regulations make it hard for me to do my job.
  22. My supervisor is willing to listen to my problem.
  23. My unit gets told about important events later than other units.
  24. Scheduled events like training and inspections are cancelled at the last minute.
  25. My supervisor encourages people to give their best efforts.
  26. In my unit it is hard to get the equipment and tools I need to do my job.

# SECTION B

A	B	C	D	E
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

27. My supervisor gives me instructions that conflict with other information I get.

28. My supervisor offers new ideas for solving job-related problems. (not in unit)

29. The officers in my unit care about what happens to the individual soldier in my unit.

30. My supervisor maintains high standards of performance (not in unit)

31. Excessive drinking is not a problem in my unit.

32. My supervisor makes us work a lot of unnecessary overtime.

33. The soldiers in my unit let you know when they think you've done a good job.

34. When I'm talking to my supervisor, he doesn't pay attention to what I'm saying.

35. My unit does not have a drug problem.

36. The soldiers in my unit try to think of better ways of getting the job done.

37. My supervisor lets other supervisors interfere with my work group.

38. My supervisor puts suggestions by the members of the unit into operation.

39. The soldiers in my unit criticize guys who are goofing off.

40. My supervisor decides what shall be done and how it shall be done.

41. My supervisor makes sure his role in the company is understood by the men.

42. The soldiers in my unit get along with each other.

43. Decisions are made in this unit after getting information from those who actually do the job.

44. My unit is respected on this post.

45. My supervisor gives us big jobs late in the day and wants them done before we leave work.

46. The senior NCOs in my unit look out for the welfare of the individual soldier in my unit.

# SECTION B

A	B	C	D	E
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

47. Meetings in this unit generally accomplish meaningful objectives.
48. Decisions are made in this unit at those levels where the most adequate information is available.
49. My supervisor insists that individuals follow standard operating procedures.
50. My supervisor lets individuals know what is expected of them.
51. My unit is willing to try new or improved methods of doing work.
52. There is discrimination against minorities in this unit.
53. I get a sense of accomplishment from the work I do.
54. Workload and time factors are taken into consideration in planning our work group assignments.
55. I look forward to coming to work every day.
56. My supervisor acts without consulting the men in the unit.
57. My job helps me to achieve my personal goals.
58. Rules in this unit are enforced.
59. There is discrimination against whites in this unit.
60. This unit places a high emphasis on accomplishing the mission.
61. I want to contribute my best efforts to the unit's mission and my assigned tasks.
62. My supervisor refuses to explain his actions.
63. The information I receive down through the chain-of-command is generally accurate.
64. My supervisor treats the people who work for him fairly.
65. I feel safe in my unit area.
66. My possessions are safe where I live.
67. All in all, I am satisfied with the unit that I am in.

# SECTION B

A	B	C	D	E
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

68. I have a good opportunity for advancement in this unit if I do a good job.
69. I am satisfied with the medical and dental care that the Army provides for me and my dependents (if any).
70. I am satisfied with my barracks living area or housing that the Army provides for me and my dependents (if any):
71. The job I have is a respected one.
72. Considering my skills and effort I put into the work, I am satisfied with my pay.
73. All in all, I am satisfied with my supervisor.
74. All in all, I am satisfied with the persons in my work group.
75. All in all, I am satisfied with the Army compared to most other organizations.
76. I enjoy doing the type of work that my job requires.
77. In general, I feel that I have gotten a fair deal from the Army.
78. All in all, I am satisfied with my job.
79. The members of my work group try to do their best.
80. I try to do my best.
81. My supervisor tries to do his best.



SECTION C

82. How well do you know how to do your job?

- A. expert
- B. above average
- C. average
- D. below average
- E. poor

83. What is your evaluation of the overall work effectiveness of your company/troop/battery?

- A. Not effective
- B. Slightly effective
- C. Effective
- D. Very effective
- E. Extremely effective

84. Compared to all other units that you have ever served in how effective is your company/troop/battery?

A-----B-----C-----D-----E

Least Effective

Most Effective

85. How many improvements would it take to make this unit the most effective company/troop/battery that you have ever served in?

- A. Many improvements are needed
- B. Quite a few improvements are needed
- C. Few improvements are needed
- D. Very few improvements are needed
- E. No improvements are needed

86. Which of the following best describes your career intentions at the present time?

- A. I will stay in the Army until retirement
- B. I will reenlist upon completion of my present obligation but am undecided about staying until retirement
- C. I am undecided whether I will reenlist
- D. I will probably leave the Army upon completion of my present obligation
- E. I will definitely leave the Army upon completion of my present obligation

87. What type of grades did you usually get in school?

- A. mostly A's
- B. mostly B's
- C. mostly C's
- D. mostly D's
- E. mostly F's

88. What percentage of the people in your unit are involved in inter-unit sport activities?
- A. 0 - 20%
  - B. 21 - 40%
  - C. 41 - 60%
  - D. 61 - 80%
  - E. 81 - 100%
89. About how frequently do members of your unit take part in military ceremonies?
- A. Once a year or less
  - B. 2 - 10 times a year
  - C. About once or twice a month
  - D. About once a week
  - E. More than once a week
90. How often do off-duty unit activities occur in your unit?
- A. Never
  - B. 1 - 5 times a year
  - C. 6 - 10 times a year
  - D. Once or twice a month
  - E. Weekly
91. About how frequently do members of your unit take part in an inspection in ranks?
- A. Once a year or less
  - B. 2 - 10 times a year
  - C. Once or twice a month
  - D. About once a week
  - E. More than once a week
92. Think of the four adults who are your best friends. (Do not include your parents, spouse, brothers or sisters.) How many of these people are in your unit?
- A. None
  - B. 1
  - C. 2
  - D. 3
  - E. 4
93. Think of the four adults who are your best friends. (Do not include your parents, spouse, brothers or sisters). How many of these people are in the Army?
- A. None
  - B. 1
  - C. 2
  - D. 3
  - E. 4

## SECTION D

The following items deal with your willingness to deploy with your unit. Please indicate how willing you would be to deploy with the unit you are in right now to each of the described situations by choosing one of the following responses:

- A. Would do almost anything to avoid going.
  - B. Would make an effort to avoid going.
  - C. Would go if required.
  - D. Would make an effort to go.
  - E. Would do almost anything to go.
94. How willingly would you deploy to a combat zone with only a small chance of actual contact with the enemy?
95. How willingly would you deploy to combat zone with a good chance of actual contact with the enemy?
96. How willingly would you enter battle against a smaller, ill-equipped enemy unit?
97. How willingly would you enter battle against a determined, well-equipped enemy unit of the same size as your unit?
98. Have you ever tried to see your company/troop/battery commander?
- A. I never tried because I didn't need to.
  - B. I tried and was able to get to see him without any trouble.
  - C. I tried and was able to see him, but it was a lot of trouble.
  - D. I tried and could not get to see him at all.
  - E. Although I needed to see him, I never tried because I knew I couldn't get to see him.
99. Are you on your first term of enlistment?
- A. Yes
  - B. No

Please indicate your agreement or disagreement to the following items by using the following response scale:

- |                      |                      |         |                   |                   |
|----------------------|----------------------|---------|-------------------|-------------------|
| A                    | B                    | C       | D                 | E                 |
| Strongly<br>Disagree | Somewhat<br>Disagree | Neutral | Somewhat<br>Agree | Strongly<br>Agree |
100. I enlisted in the Army to obtain a steady job.
101. I enlisted in the Army to find out what to do with my life.
102. I enlisted in the Army to get away from money or financial problems.
103. I enlisted in the Army to travel to new places.
104. I enlisted in the Army to become eligible for veterans' benefits.
105. I enlisted in the Army to receive special training or obtain a skill.
106. I enlisted in the Army to serve my country.
107. Whites in my unit stick together.
108. Blacks in my unit stick together.

## SECTION E

For the questions in this section, please use the following scale. Note that this is somewhat different than the scale used elsewhere.

- |      | A   | B                     | C                 | D                    | E                         |
|------|---|-----------------------|-------------------|----------------------|---------------------------|
|      | To a very<br>little extent  | To a little<br>extent | To some<br>extent | To a great<br>extent | To a very<br>great extent |
| 109. | To what extent do you think our Army leaders are smart people who know what they are doing?   |                       |                   |                      |                           |
| 110. | To what extent do you think Army officers try to do as good a job as they can?  |                       |                   |                      |                           |
| 111. | To what extent do you think you can trust our Army leadership to do what is right?  |                       |                   |                      |                           |
| 112. | To what extent are appropriate standards of order and discipline maintained within your unit?   |                       |                   |                      |                           |
| 113. | To what extent do people in your unit do what the supervisor wants because they respect his authority?  |                       |                   |                      |                           |
| 114. | To what extent do people in your unit do what the supervisor wants because he can give special rewards to those who cooperate with him?                     |                       |                   |                      |                           |
| 115. | To what extent do people in your unit do what the supervisor wants because he can punish or make things difficult for those who do not cooperate?           |                       |                   |                      |                           |
| 116. | To what extent do people in your unit do what the supervisor wants because they respect his experience and good judgment?                                   |                       |                   |                      |                           |
| 117. | To what extent do people in your unit do what the supervisor wants because they like him as a person?   |                       |                   |                      |                           |
| 118. | To what extent do people in your unit do what is expected or asked of them because they feel they owe it to their unit and don't want to let the unit down? |                       |                   |                      |                           |

• SECTION E

For the next five questions, please indicate your agreement-disagreement according to the following scale.

A	B	C	D	E
Strongly Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Strongly Agree

119. Servicemen should obey orders without question.
120. Being firm with subordinates is the best way to insure that they will do a good job.
121. A supervisor must keep a close check on his subordinates to see that they are doing a good job.
122. Although a supervisor can be democratic with his subordinates, he must still structure their work for them.
123. Subordinates prefer to be directed rather than making their own decisions in their work.
124. Which of the following best describes your unit's relationship to other units or command levels? (i.e., units above, below, or on the same level)
- A. We have little or no relationship to other units.
  - B. We depend upon other units for various things, but they don't depend on us.
  - C. Others depend upon our unit, but we don't depend upon them.
  - D. We depend upon other units and they depend upon us.
125. What do your exchanges with other units involve?
- A. Mostly resources -- goods and material that are delivered.
  - B. Mostly services performed by or for us.
  - C. Mostly just information passed to or from our unit.

## SECTION F

Use the following scale to indicate your agreement or disagreement with the statements below (126-160).

- | A                    | B                    | C       | D                 | E                 |
|----------------------|----------------------|---------|-------------------|-------------------|
| Strongly<br>Disagree | Somewhat<br>Disagree | Neutral | Somewhat<br>Agree | Strongly<br>Agree |
126. This unit has a real interest in the welfare of assigned personnel.
127. Most people will not take advantage of you if they get the chance.
128. NCO's have an adequate chance to speak their opinion concerning reward or punishment actions involving junior enlisted soldiers who work for them.
129. In the Army there are no right or wrong ways to do things, only easy and hard ways.
130. How hard you work or how good a job you do matters more in getting ahead than luck and who you know.
131. NCO's are not given enough training to do their job right.
132. NCO's are respected by junior enlisted soldiers.
133. Most senior NCO's and officers can not be trusted.
134. I have enough time off to take care of my personal and family needs.
135. I feel NCO's should have the authority to give or take away passes of their subordinates.
136. I feel that I am really accomplishing something in the Army.
137. There are few dependable people any more.
138. There is a clear understanding in my unit of which duties are to be performed by NCO's and which duties are to be performed by officers.
139. NCO's in my unit know they will be backed up by the chain of command in disciplinary matters.
140. People generally receive fair treatment under the law.
141. If I were cut off from the rest of my platoon in battle, I do not believe that they would do everything possible to fight their way back to me.

# SECTION F

Strongly  
Disagree

Somewhat  
Disagree

Neutral

Somewhat  
Agree

Strongly  
Agree

142. NCO's do not have enough authority of their own to handle soldier indiscipline problems.
143. There is enough emphasis on competition in this unit.
144. Most people can be trusted.
145. The Army does not eliminate undesirable NCO's.
146. NCO's are not given enough opportunity to be in charge of the training of their soldiers.
147. Most of the time it is very difficult to figure out what a person's senior NCO's and officers really want.
148. People in my work group work hard.
149. The image of the NCO corps is high.
150. There are no right or wrong ways to make money, only easy and hard ways.
151. Most senior NCO's and officers in battle would be willing to go through anything that they made their men go through.
152. I feel NCO's should have the authority to impose extra duty or restriction on their subordinates.
153. Officers fail to hold NCO's accountable when the NCO performs poorly.
154. I am working in job areas for which I have been trained.
155. People's ideas change so much that I wonder if we'll ever have anything to depend on.
156. The performance of outstanding NCO's is recognized and adequately rewarded in my unit.
157. In the Army, a person usually can depend on his senior NCO's and officers to look out for him.
158. A person has got to always first look out for "number one" (himself).
159. Officers try to take over NCO responsibilities and do them for the NCO.
160. There is a good working relationship among the personnel in this unit.

**APPENDIX F**

**WAVE 4 QUESTIONNAIRES**



## COMMAND CLIMATE

## VERSION II

This questionnaire is designed to learn more about the day-to-day life in your unit or section. The purpose is to allow every individual to contribute to an accurate picture of the unit.

This is not a test and there are no right or wrong answers. If the results are to be helpful, it is important that you respond to all statements as thoughtfully and frankly as possible. Your ideas are important and can provide a valuable contribution. Do not simply agree with your friends or say what you think others expect you to say.

All answers to this questionnaire are considered confidential. The completed questionnaires will be processed by computer and the results summarized in statistical form. Your individual responses will remain strictly confidential since they will be combined with those of many other people. Any background information that you list will be used to sort people into large groups and will not be used to identify you personally.

Read the instructions carefully before you begin responding to the statements. Thank you very much for your cooperation in completing this questionnaire.

DATA REQUIRED BY THE PRIVACY ACT OF 1974 (5 U.S.C. 552a)	
TITLE OF FORM PT 5203b (R2), Command Climate -- Version II	PRESCRIBING DIRECTIVE AR 70-1
1. AUTHORITY 10 USC Sec 4503	
2. PRINCIPAL PURPOSE(S) The data collected with the attached form are to be used for research purposes only.	
3. ROUTINE USES This is an experimental personnel data collection form developed by the U.S. Army Research Institute for the Behavioral and Social Sciences pursuant to its research mission as prescribed in AR 70-1. When identifiers (name or Social Security Number) are requested they are to be used for administrative and statistical control purposes only. Full confidentiality of the responses will be maintained in the processing of these data.	
4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION Your participation in this research is strictly voluntary. Individuals are encouraged to provide complete and accurate information in the interests of the research, but there will be no effect on individuals for not providing all or any part of the information. This notice may be detached from the rest of the form and retained by the individual if so desired.	

FORM

Privacy Act Statement - 26 Sep 75

DA Form 4368-R, 1 May 75

### INSTRUCTIONS

1. This questionnaire has two parts: an answer sheet and a question booklet. The section that you are now reading is the question booklet. Check to see that you have an answer sheet.
2. Read each statement carefully.
3. As soon as you understand a statement, decide how much you agree with it. Your first impressions are more valuable than your second thoughts.
4. After you have decided on your answer, it will be recorded on the separate Answer Sheet that indicates the amount of your agreement.
5. If no answer category exactly expresses your thoughts, use the best answer available. Be sure to mark only one answer for each statement and to respond to all statements.
6. Be sure to follow the answer sheet carefully. Match the numbers on the answer sheet with the number of each statement.
7. Please use a pencil in completing this form.
8. Please do not make any marks on the Question Booklet.

### DEFINITIONS

In filling out this questionnaire, please use the following definitions:

"Your supervisor" - the person who gives you your day-to-day work assignments and evaluates your work.

"Your unit" - your company/troop/battery.

"Your work group" - the group of people that you work with on a day-to-day basis.

SECTION A

In this section each question has the scale printed under it. Put your answer to these questions (numbers 1 to 6) on the answer sheets.

1. Sex
  - A. Male
  - B. Female
2. Marital Status
  - A. Single
  - B. Married, living with family
  - C. Married, separated from family due to lack of affordable housing
  - D. Married, separated from family due to other reasons
  - E. Divorced
3. Housing
  - A. On post - barracks
  - B. On post - family housing
  - C. On post - other
  - D. Off post - government furnished housing
  - E. Off post - civilian housing
4. Race/Ethnic Group
  - A. Black
  - B. Hispanic (Chicano, Mexican-American, Puerto Rican)
  - C. Native American (American Indian, Aleut)
  - D. White
  - E. Other
5. Is your present salary sufficient to provide you with a decent standard of living?
  - A. I can live quite comfortably within my salary.
  - B. My salary is adequate to meet my needs.
  - C. It is difficult to live decently with my salary.
  - D. Trying to live within my salary imposes a great hardship on me and my family (if any).
  - E. I can get by on my salary only by going heavily in debt.
6. What is your level of education?
  - A. Less than high school
  - B. High school or G.E.D. diploma
  - C. Some college
  - D. College degree
  - E. Advanced degree

## SECTION B

The following scale is used to indicate your agreement or disagreement with statements (7-79).

- | A                    | B                    | C       | D                 | E                 |
|----------------------|----------------------|---------|-------------------|-------------------|
| Strongly<br>Disagree | Somewhat<br>Disagree | Neutral | Somewhat<br>Agree | Strongly<br>Agree |
7. My job gives me the chance to learn skills that are useful outside the Army.
  8. In my job, I can tell how well I am doing without other people telling me.
  9. I know what I will be doing from day to day.
  10. My job requires high-level technical skills.
  11. In my job, I have more work to do than one person can handle.
  12. My job lets me use my skills and training.
  13. In my job, I have to work extra hours.
  14. My job lets me do the things I am good at.
  15. My job keeps me too busy to take extra training programs.
  16. My job gives me the feeling that I have done something important.
  17. The pressures of my job spill over into my off-duty life.
  18. I can see what my job has to do with others in my unit.
  19. I have full responsibility for doing certain parts of my job.
  20. My job leaves me feeling tired at the end of the day.
  21. Army rules and regulations make it hard for me to do my job.
  22. My supervisor is willing to listen to my problem.
  23. My unit gets told about important events later than other units.
  24. Scheduled events like training and inspections are cancelled at the last minute.
  25. My supervisor encourages people to give their best efforts.
- In my unit it is hard to get the equipment and tools I need to do my job.

# SECTION B

- | A                 | B                 | C       | D              | E              |
|-------------------|-------------------|---------|----------------|----------------|
| Strongly Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Strongly Agree |
| 27.               |                   |         |                |                |
| 28.               |                   |         |                |                |
| 29.               |                   |         |                |                |
| 30.               |                   |         |                |                |
| 31.               |                   |         |                |                |
| 32.               |                   |         |                |                |
| 33.               |                   |         |                |                |
| 34.               |                   |         |                |                |
| 35.               |                   |         |                |                |
| 36.               |                   |         |                |                |
| 37.               |                   |         |                |                |
| 38.               |                   |         |                |                |
| 39.               |                   |         |                |                |
| 40.               |                   |         |                |                |
| 41.               |                   |         |                |                |
| 42.               |                   |         |                |                |
| 43.               |                   |         |                |                |
| 44.               |                   |         |                |                |
| 45.               |                   |         |                |                |
| 46.               |                   |         |                |                |

# SECTION B

- | A                 | B   | C       | D              | E              |
|-------------------|---|---------|----------------|----------------|
| Strongly Disagree | Somewhat Disagree   | Neutral | Somewhat Agree | Strongly Agree |
| 47.               | Meetings in this unit generally accomplish meaningful objectives.                                 |         |                |                |
| 48.               | Decisions are made in this unit at those levels where the most adequate information is available. |         |                |                |
| 49.               | My supervisor insists that individuals follow standard operating procedures.                      |         |                |                |
| 50.               | My supervisor lets individuals know what is expected of them.                                     |         |                |                |
| 51.               | My unit is willing to try new or improved methods of doing work.                                  |         |                |                |
| 52.               | There is discrimination against minorities in this unit.  |         |                |                |
| 53.               | I get a sense of accomplishment from the work I do.   |         |                |                |
| 54.               | Workload and time factors are taken into consideration in planning our work group assignments.    |         |                |                |
| 55.               | I look forward to coming to work every day.   |         |                |                |
| 56.               | My supervisor acts without consulting the men in the unit.  |         |                |                |
| 57.               | My job helps me to achieve my personal goals.   |         |                |                |
| 58.               | Rules in this unit are enforced.  |         |                |                |
| 59.               | There is discrimination against whites in this unit.  |         |                |                |
| 60.               | This unit places a high emphasis on accomplishing the mission.                                    |         |                |                |
| 61.               | I want to contribute my best efforts to the unit's mission and my assigned tasks.                 |         |                |                |
| 62.               | My supervisor refuses to explain his actions.   |         |                |                |
| 63.               | The information I receive down through the chain-of-command is generally accurate.                |         |                |                |
| 64.               | My supervisor treats the people who work for him fairly.  |         |                |                |
| 65.               | I feel safe in my unit area.  |         |                |                |
| 66.               | My possessions are safe where I live.   |         |                |                |
| 67.               | All in all, I am satisfied with the unit that I am in.  |         |                |                |
| 68.               | I have a good opportunity for advancement in this unit if I do a good job.                        |         |                |                |

SECTION B

- | A                    | B                    | C       | D                 | E                 |
|----------------------|----------------------|---------|-------------------|-------------------|
| Strongly<br>Disagree | Somewhat<br>Disagree | Neutral | Somewhat<br>Agree | Strongly<br>Agree |
69. I am satisfied with the medical and dental care that the Army provides for me and my dependents (if any).
70. I am satisfied with my barracks living area or housing that the Army provides for me and my dependents (if any).
71. The job I have is a respected one.
72. Considering my skills and the effort I put into the work, I am satisfied with my pay.
73. All in all, I am satisfied with my supervisor.
74. All in all, I am satisfied with the persons in my work group.
75. All in all, I am satisfied with the Army compared to most other organizations.
76. I enjoy doing the type of work that my job requires. .
77. In general, I feel that I have gotten a fair deal from the Army.
78. All in all, I am satisfied with my job.
79. The members of my work group try to do their best.
80. I try to do my best. .
81. My supervisor tries to do his best.

SECTION C

82. How well do you know how to do your job?

- A. expert
- B. above average
- C. average
- D. below average
- E. poor

83. What is your evaluation of the overall work effectiveness of your company/troop/battery?

- A. Not effective
- B. Slightly effective
- C. Effective
- D. Very effective
- E. Extremely effective

84. Compared to all other units that you have ever served in how effective is your company/troop/battery?

A-----B-----C-----D-----E

Least Effective

Most effective

85. How many improvements would it take to make this unit the most effective company/troop/battery that you have ever served in?

- A. Many improvements are needed
- B. Quite a few improvements are needed
- C. Few improvements are needed
- D. Very few improvements are needed
- E. No improvements are needed

86. Which of the following best describes your career intentions at the present time?

- A. I will stay in the Army until retirement
- B. I will reenlist upon completion of my present obligation but am undecided about staying until retirement
- C. I am undecided whether I will reenlist
- D. I will probably leave the Army upon completion of my present obligation
- E. I will definitely leave the Army upon completion of my present obligation

87. What type of grades did you usually get in school?

- A. mostly A's
- B. mostly B's
- C. mostly C's
- D. mostly D's
- E. mostly F's



88. What percentage of the people in your unit are involved in inter-unit sport activities?

- A. 0 - 20%
- B. 21 - 40%
- C. 41 - 60%
- D. 61 - 80%
- E. 81 - 100%

89. About how frequently do members of your unit take part in military ceremonies?

- A. Once a year or less
- B. 2 - 10 times a year
- C. About once or twice a month
- D. About once a week
- E. More than once a week

90. How often do off-duty unit activities occur in your unit?

- A. Never
- B. 1 - 5 times a year
- C. 6 - 10 times a year
- D. Once or twice a month
- E. weekly

91. About how frequently do members of your unit take part in an inspection in ranks?

- A. Once a year or less
- B. 2 - 10 times a year
- C. Once or twice a month
- D. About once a week
- E. More than once a week

92. Think of the four adults who are your best friends. (Do not include your parents, spouse, brothers or sisters). How many of these people are in your unit?

- A. None
- B. 1
- C. 2
- D. 3
- E. 4

93. Think of the four adults who are your best friends. (Do not include your parents, spouse, brothers or sisters). How many of these people are in the Army?

- A. None
- B. 1
- C. 2
- D. 3
- E. 4

## SECTION D

The following items deal with your willingness to deploy with your unit. Please indicate how willing you would be to deploy with the unit you are in right now to each of the described situations by choosing one of the following responses:

- A. Would do almost anything to avoid going.
- B. Would make an effort to avoid going.
- C. Would go if required.
- D. Would make an effort to go.
- E. Would do almost anything to go.

94. How willing would you deploy to a combat zone with only a small chance of actual contact with the enemy?
95. How willingly would you deploy to combat zone with a good chance of actual contact with the enemy?
96. How willingly would you enter battle against a smaller, ill-equipped enemy unit?
97. How willingly would you enter battle against a determined, well-equipped enemy unit of the same size as your unit?

98. What is your evaluation of the overall work effectiveness of your battalion?

- A. Not effective
- B. Slightly effective
- C. Effective
- D. Very effective
- E. Extremely effective

99. Compared to all other units in which you have ever served, how effective is your battalion?

A-----B-----C-----D-----E

Least Effective

Most Effective

100. How many improvements would it take to make this unit the most effective battalion in which you have ever served?

- A. Many improvements are needed
- B. Quite a few improvements are needed
- C. Few improvements are needed
- D. Very few improvements are needed
- E. No improvements are needed

SECTION D

101. Which response best describes your knowledge of Organizational Effectiveness (OE)?
- A. I have never heard of OE
  - B. I have heard the term, but know very little about OE
  - C. I generally understand what OE is
  - D. I am knowledgeable about OE
102. Have you received instruction on OE in a service school?
- A. Yes
  - B. No
103. If OE activities have been conducted in your unit/organization this past year, what effect have these activities had on the unit/organization performance?
- A. Does not apply, OE activities have not been conducted in my unit/organization this past year
  - B. A negative effect
  - C. A mixed effect
  - D. No effect
  - E. A positive effect

The next series of items deals with your opinion concerning the use of Organizational Effectiveness (OE). For each of the unit conditions described below, please indicate how much you would welcome the services of an Organizational Effectiveness Staff Officer (OESO). Do this by using the following response scale.

- A. I would be strongly opposed to calling in an OESO under these circumstances.
- B. I would be opposed to calling in an OESO under these circumstances.
- C. I would be neither opposed nor in favor of calling in an OESO under these circumstances.
- D. I would be in favor of calling in an OESO under these circumstances.
- E. I would be strongly in favor of calling in an OESO under these circumstances.

If you do not feel that you are familiar enough with the Organizational Effectiveness program to make these judgments, skip items 104 to 108.

104. Your unit is having difficulty accomplishing its objectives and it is having serious morale problems.
105. Your unit is functioning smoothly but you feel that it could be better.
106. Your unit is reasonably effective in accomplishing its objective but it has a serious morale problem.
107. Your unit is quite likely to fail an upcoming evaluation.
108. Your unit is having difficulty accomplishing its objectives but has no apparent morale problems.

## SECTION E

For the questions in this section, please use the following scale. Note that this is somewhat different than the scale used elsewhere.

- | A                       | B                  | C              | D                 | E                      |
|-------------------------|--------------------|----------------|-------------------|------------------------|
| To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
109. To what extent do you think our Army leaders are smart people who know what they are doing?
  110. To what extent do you think Army officers try to do as good a job as they can?
  111. To what extent do you think you can trust our Army leadership to do what is right?
  112. To what extent are appropriate standards of order and discipline maintained within your unit?
  113. To what extent do people in your unit do what the supervisor wants because they respect his authority?
  114. To what extent do people in your unit do what the supervisor wants because he can give special rewards to those who cooperate with him?
  115. To what extent do people in your unit do what the supervisor wants because he can punish or make things difficult for those who do not cooperate?
  116. To what extent do people in your unit do what the supervisor wants because they respect his experience and good judgment?
  117. To what extent do people in your unit do what the supervisor wants because they like him as a person?
  118. To what extent do people in your unit do what is expected or asked of them because they feel they owe it to their unit and don't want to let the unit down?

## SECTION E

For the next five questions, please indicate your agreement-disagreement according to the following scale.

- | A                    | B                    | C                             | D                 | E                 |
|----------------------|----------------------|-------------------------------|-------------------|-------------------|
| Strongly<br>Disagree | Slightly<br>Disagree | Neither Agree<br>nor Disagree | Slightly<br>Agree | Strongly<br>Agree |
119. Servicemen should obey orders without question.
120. Being firm with subordinates is the best way to insure that they will do a good job.
121. A supervisor must keep a close check on his subordinates to see that they are doing a good job.
122. Although a supervisor can be democratic with his subordinates, he must still structure their work for them.
123. Subordinates prefer to be directed rather than making their own decisions in their work.
124. Which of the following best describes your unit's relationship to other units or command levels? (i.e., units above, below, or on the same level)
- A. We have little or no relationship to other units.
  - B. We depend upon other units for various things, but they don't depend upon us.
  - C. Others depend upon our unit, but we don't depend upon them.
  - D. We depend upon other units and they depend upon us.
125. What do your exchanges with other units involve?
- A. Mostly resources -- goods and material that are delivered.
  - B. Mostly services performed by or for us.
  - C. Mostly just information passed to or from our unit.

## SECTION F

Use the following scale to indicate your agreement or disagreement with the statements below (126-160).

A	B	C	D	E
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

- 126. This unit has a real interest in the welfare of assigned personnel.
- 127. Most people will not take advantage of you if they get the chance.
- 128. NCO's have an adequate chance to speak their opinion concerning reward or punishment actions involving junior enlisted soldiers who work for them.
- 129. In the Army there are no right or wrong ways to do things, only easy and hard ways.
- 130. How hard you work or how good a job you do matters more in getting ahead than luck and who you know.
- 131. NCO's are not given enough training to do their job right.
- 132. NCO's are respected by junior enlisted soldiers.
- 133. Most senior NCO's and officers can not be trusted.
- 134. I have enough time off to take care of my personal and family needs.
- 135. I feel NCO's should have the authority to give or take away passes of their subordinates.
- 136. I feel that I am really accomplishing something in the Army.
- 137. There are few dependable people any more.
- 138. There is a clear understanding in my unit of which duties are to be performed by NCO's and which duties are to be performed by officers.
- 139. NCO's in my unit know they will be backed up by the chain of command in disciplinary matters.
- 140. People generally receive fair treatment under the law.
- 141. If I were cut off from the rest of my platoon in battle, I do not believe that they would do everything possible to fight their way back to me.

## SECTION F

**Strongly  
Disagree**

**Somewhat  
Disagree**

**Neutral**

**Somewhat  
Agree**

**Strongly  
Agree**

142. NCO's do not have enough authority of their own to handle soldier indiscipline problems.
143. There is enough emphasis on competition in this unit.
144. Most people can be trusted.
145. The Army does not eliminate undesirable NCO's.
146. NCO's are not given enough opportunity to be in charge of the training of their soldiers.
147. Most of the time it is very difficult to figure out what a person's senior NCO's and officers really want.
148. People in my work group work hard.
149. The image of the NCO corps is high.
150. There are no right or wrong ways to make money, only easy and hard ways.
151. Most senior NCO's and officers in battle would be willing to go through anything that they made their men go through.
152. I feel NCO's should have the authority to impose extra duty or restriction on their subordinates.
153. Officers fail to hold NCO's accountable when the NCO performs poorly.
154. I am working in job areas for which I have been trained.
155. People's ideas change so much that I wonder if we'll ever have anything to depend on.
156. The performance of outstanding NCO's is recognized and adequately rewarded in my unit.
157. In the Army, a person usually can depend on his senior NCO's and officers to look out for him.
158. A person has got to always first look out for "number one" (himself).
159. Officers try to take over NCO responsibilities and do them for the NCO.
160. There is a good working relationship among the personnel in this unit.

.SECTION G

162. Officers only

What is your duty assignment?

- A. Battalion Primary Staff Officer
- B. Other Battalion Staff Officer
- C. Company Commander
- D. Platoon Leader
- E. Other Company Officer

163. NCOs only

What is your duty assignment?

- A. Squad/Section Leader
- B. Platoon or First Sgt.
- C. Company Sergeant Major
- D. Other (Company level & below)
- E. Other (Battalion level & above)

79: 5203b(R2)



**APPENDIX G**

**INTERVIEW SCHEDULE**

BRIGADE LEVEL OR HIGHER

COMMAND CLIMATE II

INTERVIEW

WAVE 4

November, 1979

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Names and ID codes of  
battalions rated)

Interviewee

- ( ) Commanding General
- ( ) Asst. Division Commander  
(Maneuvers or Operations)
- ( ) Asst. Division Commander  
(Support or Maintenance)
- ( ) Brigade

Fort \_\_\_\_\_

Brigade or Division  
Name \_\_\_\_\_

Interviewer: \_\_\_\_\_

Date of Interview: \_\_\_\_\_

1. What date did you assume command of this unit? \_\_\_\_\_ (\_\_\_\_)

2.A. (EXPLAIN TAPE RECORDER) What do you feel is the single biggest problem facing you in achieving and maintaining the readiness of your command?

B. What steps have you been able to take in attempting to cope with this problem?

3.A. What is the next biggest problem facing you in achieving and maintaining the readiness of your command?

B. What steps have you been able to take in attempting to cope with this problem?

(TAPE OFF)

## DEFINITION OF EFFECTIVENESS

As a Commander you must make judgments about the effectiveness of the battalions (companies) within your command. We are interested in finding out what criteria Commanders rely on in making these judgments. Could you please state the criterion, then relate what it is you look for in determining the extent to which that criterion is achieved? e.g., what type of indicators do you use to determine whether the criterion is achieved.

Criterion 1) \_\_\_\_\_

Indicators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Criterion 2) \_\_\_\_\_

Indicators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Criterion 3) \_\_\_\_\_

Indicators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Criterion 4) \_\_\_\_\_

Indicators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Criterion 5) \_\_\_\_\_

Indicators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

GENERAL OFFICERS ONLY

Type of Officer:

- (1) ADC OP
- (2) ADC Maint
- (3) CG

EFFECTIVENESS RANKINGS

We would like you to think about the battalions in your command in terms of their effectiveness. Could you please list the top 3 and bottom 3 units beginning with the most effective units first?

\_\_\_\_\_ No. of Battalions in Command

Three most effective Bns.

I.D. Code (if in project)

Most effective \_\_\_\_\_  
Reason: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Second most effective \_\_\_\_\_  
Third highest in effectiveness \_\_\_\_\_

Three least effective Bns.

Least effective \_\_\_\_\_  
Reason: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Next least effective \_\_\_\_\_  
Third lowest in effectiveness \_\_\_\_\_

# GENERAL OFFICERS ONLY

We would now like you to rank each of the battalions in your command which are participating in the Command Climate Survey relative to all other battalions in your command.

PARTICIPATING BATTALIONS	BN. I.D. CODE	RANKING AMONG ALL BN IN COMMAND	RATING OF BN	NUMERICAL VALUE
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Number of BN in Command \_\_\_\_\_

Note to interviewer: First, get rankings of battalions (among all those in command, not just those in the study), pushing to obtain actual place in order, not just top third, etc. Second, obtain ratings.

## EFFECTIVENESS RATING

We would now like you to rate each of the battalions with regard to their overall effectiveness. This rating should be performed in accordance with your own individual standards of performance, rather than in accordance with some absolute measure of combat readiness. That is, this rating should not be a measure of how combat ready these units are, since presumably most units are combat ready, but rather it should be a reflection of how good these units are relative to how good you think they can be.

Please indicate this judgment by assigning a letter grade to each unit's performance in a manner similar to that used in educational settings. That is, let "A" = Excellent performance, "B" = Good performance, "C" = Fair performance, "D" = just Passable, and "F" = Inadequate performance.

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
13	12	11	10	9	8	7	6	5	4	3	2	1

Interviewer should complete this first column prior to interview.

# BRIGADE COMMANDERS ONLY

## EFFECTIVENESS RANKINGS

We would like you to think about the Battalions within your command in terms of their effectiveness. Could you please list these units in order of their effectiveness beginning with the most effective?

No. of units  
in command

BATTALION NAME

I.D. CODE

RANK

RATING

1)

Reason this unit is most effective:

2)

3)

4)

5)

6)

7)

8)

Reason last unit is least effective:

## EFFECTIVENESS RATING

We would now like you to rate each of the battalions with regard to their overall effectiveness. This rating should be performed in accordance with your own individual standards of performance, rather than in accordance with some absolute measure of combat readiness. That is, this rating should not be a measure of how combat ready these units are, since presumably most units are combat ready, but rather it should be a reflection of how good these units are relative to how good you think they can be.

Please indicate this judgment by assigning a letter grade to each unit's performance in a manner similar to that used in educational settings. That is, let "A" = Excellent performance, "B" = Good performance, "C" = Fair performance, "D" = just Passable, and "F" = Inadequate performance.

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
13	12	11	10	9	8	7	6	5	4	3	2	1

*This is to be asked of all interviewees*

It may be necessary in our analyses of this project's data to analyze the data from Army components that have utilized OE separately from those which have not. This is so since OE, by attempting to directly influence a command's command climate, may moderate the relationship between the unit's command climate and its effectiveness. Therefore, while not wishing to violate the confidentiality of the OE process, we would like you, if you feel free to do so, to tell us whether you or your staff have been involved in an OE operation during the last six months?

A. ☐ Yes

☐ No

B. If "Yes", when? \_\_\_\_\_ (\_\_\_\_)

C. If "Yes", who else was involved (e.g., bn staff only, whole command, etc.)?



APPENDIX H

PERFORMANCE (RECORD) FORMS

## COMPANY INFORMATION

### INSTRUCTIONS

Please complete the following forms by filling in the indicated data in the appropriate spaces. In doing so, please observe the following points:

1. Please write your battalion and company identification in the space provided in the upper left corner of each page.
2. Pages containing data from the Unit Readiness (FORSTAT) Report (page 2) are classified CONFIDENTIAL when completed.
3. Fill data in spaces pertaining to AGIs, ARTEPS and command assumption dates (page 1) only if these occurred during the specified period. Otherwise, leave blank.

Thank you for your cooperation.

POST: \_\_\_\_\_

BN: \_\_\_\_\_

CO: \_\_\_\_\_

<u>Apr-Jun 79</u>	<u>Office Use Only</u>	<u>Jul-Sep 79</u>	<u>Office Use Only</u>
No. of EDP Discharges (Chap 5)	____ (1 8-10)	____	(1 43-45)
No. of Adverse Discharge (Chaps 9,10,11,13,14)	____ (1 11-13)	____	(1 46-48)
No. of Articles 15	____ (1 14-16)	____	(1 49-51)
No. of Courts-Martial (Spec. Summary, General)	____ (1 17-18)	____	(1 52-53)
No. of AWOLS	____ (1 19-21)	____	(1 54-56)
No. of DFRs	____ (1 22-24)	____	(1 57-59)
No. of First Term Reenlistment	____ (1 25-27)	____	(1 60-62)
First Term Reup Objective	____ (1 28-30)	____	(1 63-65)
No. of Career Reenlistments	____ (1 31-33)	____	(1 66-68)
Career Reup Objective	____ (1 34-36)	____	(1 69-71)
No. of Crimes of Violence	____ (1 37-38)	____	(1 72-73)
No. of Crimes against Property	____ (1 39-40)	____	(1 74-75)
N. of Marijuana/Drug Offenses	____ (1 41-42)	____	(1 76-77)

ARTEP During Apr 79-Sep 79

Date: _____	(2 8-9)	<u>Company Command Assumption Dat</u>
# of Missions Tested: _____	(2 10-11)	_____
# of Missions Rated Sat: _____	(2 12-13)	_____

AGI During Apr 79-Sep 79

Date: _____	(2 16-17)
# of Areas Inspected _____	(2 18-19)
# of Areas Rated Sat: _____	(2 20-21)

(Office Use Only)

(1-6/1-5)

SECTION A - DA Form 2715

- Overall REDCON (Block 20)
- Reason not C-1 (Block 21)
- Personnel REDCON (Block 22)
- EOH REDCON (Block 26)
- Equipmt. Status REDCON (Block 30)
- Training REDCON (Block 34)
- ALC (Block 51)

SECTION B - DA Form 2715

- 1. Training Weeks (Blocks 16 - 17)
- 2. Operating Strength (Blocks 18 - 20)
- 3. MOS Qualified % (Blocks 21 - 22)
- 4. Turnover (Blocks 23 - 24)
- 5. Aggregate Strength
- 6. Officer Strength (Blocks 30 - 33)
- 7. WO Strength (Blocks 34 - 36)
- 8. Enlisted Strength (Blocks 37 - 41)
- 9. % Equipmt. Ready (Block 47 - 48)
- 10. % Equipmt. Short (Block 49 - 50)
- 11. % Equipmt. Not Ready (Block 51 - 52)

(Office Use Only)	Apr 79 (Card 3)	May 79 (Card 4)	June 79 (Card 5)	July 79 (Card 6)	Aug 79 (Card 7)	Sept 79 (Card 8)	Oct 79 (Card 9)
(10)							
(11)							
(12)							
(13)							
(14)							
(15)							
(16)							
(17-18)							
(19-21)							
(22-23)							
(24-25)							
(26-29)							
(30-33)							
(34-36)							
(37-41)							
(42-43)							
(44-45)							
(46-47)							

CONFIDENTIAL When filled in